JANUARY 2014

December 2013 Groundwater Monitoring Report

Lincoln County Class IV Asbestos Landfill
Lincoln County, Montana

Prepared For:

U.S. Army Corps of Engineers- Omaha District

Rapid Response Program

Offutt AFB, NE 68113

and

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Acronyms

AMSL	above mean sea level
C	degrees Celsius
CDM	Camp Dresser & McKee, Inc.
COD	chemical oxygen demand
CRQL	contract required quantitation limit
DEQ	Montana Department of Environmental Quality
DRO	diesel range organics
DTW	depth to groundwater surface
EPH	extractable petroleum hydrocarbon method
GRO	gasoline range organics
GW	groundwater
J	The analyte was positively identified, however the concentration is an estimated value.
MDL	method detection limit
mg/L	milligrams per liter
MW	monitoring well
Non Deg	Montana DEQ nondegradation rules (17.30.701 et seq. Administrative Rules of Montana (ARM))
ND	Non Detect- the result was less than the RDL
NM	not measured
NTU	nephelometric turbidity units
PBS&J	Post, Buckley, Schuh & Jernigan, Inc.
RDL	reported detection limit
RDP	relative percent difference
QAPP	quality assurance project plan
SAP	sampling and analysis plan
SOP	standard operating procedures
SU	standard units
TOC	top of well casing
U	The analyte was tested for, but not detected; the associated numerical value is at or below the reporting limit.
VOC	volatile organic compounds
VPH	volatile petroleum hydrocarbon method
µg/L	micrograms per liter
µS/cm	microsiemens per centimeter

Section 1
Introduction

The following is a summary of the groundwater monitoring data resulting from samples collected at the Lincoln County Class IV Asbestos Landfill (Class IV Asbestos Landfill) on December 17 and 18, 2013. The landfill is located in the NE ¼ of Section 28, Township 31 North, Range 31 West in Lincoln County, adjacent to the Lincoln County Class II Landfill (Class II Landfill facility); approximately 2 miles north-northwest of Libby, Montana (see Figure 1-1). Groundwater monitoring is conducted at the Class II Landfill on a semi-annual basis according to permit requirements from the Montana Department of Environmental Quality (DEQ) Solid Waste Program. Groundwater monitoring is conducted at the Class IV Asbestos Landfill on a semi-annual basis per the Lincoln County Class IV Asbestos Landfill Operations Plan (Operations Plan) dated February 2008 (CDM, 2008).

Monitoring wells CDM-MW7 and CDM-MW8 were installed at the Class IV Asbestos Landfill by CDM in 2002. Monitoring wells MW-2, MW-3, and MW-4 were installed between 1990 and 1993 at the adjacent Class II Landfill facility, located immediately east of the Class IV Asbestos Landfill. CDM-MW7 is upgradient of the Class IV facility and CDM-MW8 is cross-gradient with both being upgradient of the Class II landfill. MW-3 is downgradient of the Class IV landfill and cross-gradient of the Class II landfill. MW-2 and MW-4 are downgradient of the Class II landfill (see Figure 2-1).

Data from CDM-MW7 and CDM-MW8 consist of depth to groundwater measurements, field measurements of groundwater quality parameters, and laboratory analytical results from groundwater samples collected by CDM Smith on December 17 and 18, 2013. Data for CDM-MW7 and CDM-MW8 were collected following sampling and measurement protocols described in the Lincoln County Class IV Asbestos Landfill Operation Plan (CDM 2008). The depths to groundwater for all wells, including the county wells, were measured on December 17, 2013. An electronic sounder was used to measure the depth to groundwater at all wells, as required by the Lincoln County Class IV Asbestos Landfill Operation Plan for wells CDM-MW7 and CDM-MW8, and the Lincoln County Class II Sampling and Analysis Plan (SAP) for wells MW-2, MW-3, and MW-4.

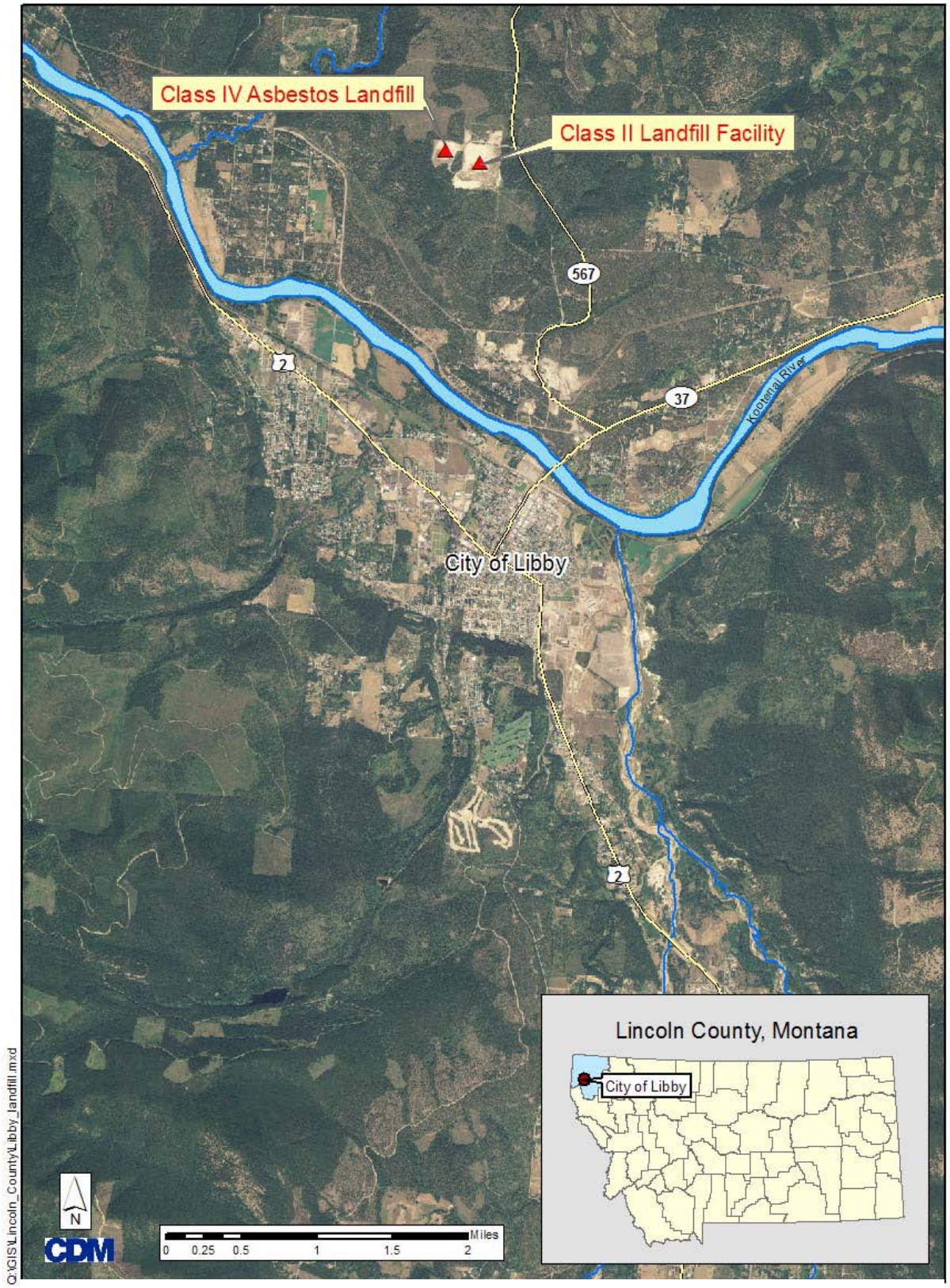

Figure 1-1 Libby Landfill Location.

Section 2
Field Activities

2.1 Water Level Measurements

The depths to groundwater in CDM-MW7, CDM-MW8, MW-3, and MW-4 were measured by CDM Smith on December 17, 2013 (Table 2-1). The top of casing (TOC) elevations for CDM-MW7 and CDM-MW-8 were resurveyed by Kootenai Surveyors, Inc. in November 2013 because the wells risers had to be cut to accommodate for the dedicated bladder pump systems.

Table 2-1 Depth to Groundwater and Groundwater Elevations, December 17, 2013.
Lincoln County Class II Landfill and Class IV Asbestos Landfill

Monitoring Well	TOC Elevation (feet amsl)	DTW (feet below TOC)	GW Elevation (feet amsl)
CDM-MW7	2422.60	219.62	2202.98
CDM-MW8	2415.18	226.89	2188.29
MW-2	2313.02	165.45	2147.57
MW-3	2343.07	203.02	2140.05
MW-4	2294.52	156.46	2138.06

Note:
TOC = top of well casing
GW = Groundwater
DTW = depth to groundwater surface
NM = not measured – new pump housing
amsl = above mean sea level

2.2 Groundwater Sample Collection

Groundwater samples were collected from CDM-MW7 and CDM-MW8 following CDM Smith standard operating procedures (SOP) for purging and groundwater sample collection. Purging and sample collection were completed using a dedicated bladder pump that were previously installed by CDM Smith personnel. Samples were analyzed for all DEQ Solid Waste Program ARM 17.50.708 (16) (b) Table 1 analytes, including volatile organic compounds (VOC), chloride, total cyanide, nitrate/nitrite as nitrogen, sulfate, dissolved metals, chemical oxygen demand (COD), Volatile Petroleum Hydrocarbons (VPH), and Extractable Petroleum Hydrocarbons (EPH). All samples were submitted under chain-of-custody protocol and analyzed by Shealy Environmental Services, Inc. Laboratories in West Columbia, South Carolina. Additionally, groundwater samples were analyzed for asbestos by EMSL Analytical, Inc. in Libby, Montana.

Quality control samples consisted of two trip blank, a field blank, and one duplicate field sample. The validated laboratory analytical sample results are provided in Appendix B. Field logs from CDM Smith are included in Appendix C.

A potentiometric surface map was constructed using the groundwater level measurements collected on December 17, 2013 (Figure 2-1). The potentiometric surface shows that the groundwater flow direction is to the southeast, which is consistent with previous reports.

2.3 Field Water Quality Parameters

Groundwater quality parameters were measured during monitoring well purging of CDM-MW7 and CDM-MW8 with a calibrated YSI 556 Multi-parameter water quality meter. Water quality parameters are presented in Table 2-2 and include pH, specific conductance, turbidity, dissolved oxygen, and temperature. Field parameter and static water levels measured during purging prior to sampling are included in Appendix D – Water Sampling Logs. Parameter in both wells stabilized before sampling.

Table 2-2 Water Quality Monitoring Parameters, December 17 and 18, 2013.
Lincoln County Class IV Asbestos Landfill

Monitoring Well	pH (SU)	Specific Conductance (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)
CDM-MW7	7.51	413	0.14	1.02	8.19
CDM-MW8	7.40	507	0.40	4.05	7.61

Note:
SU = standard units
µS/cm = microsiemens per centimeter
NTU = nephelometric turbidity unit
mg/L = milligram per liter
°C = degree Celsius

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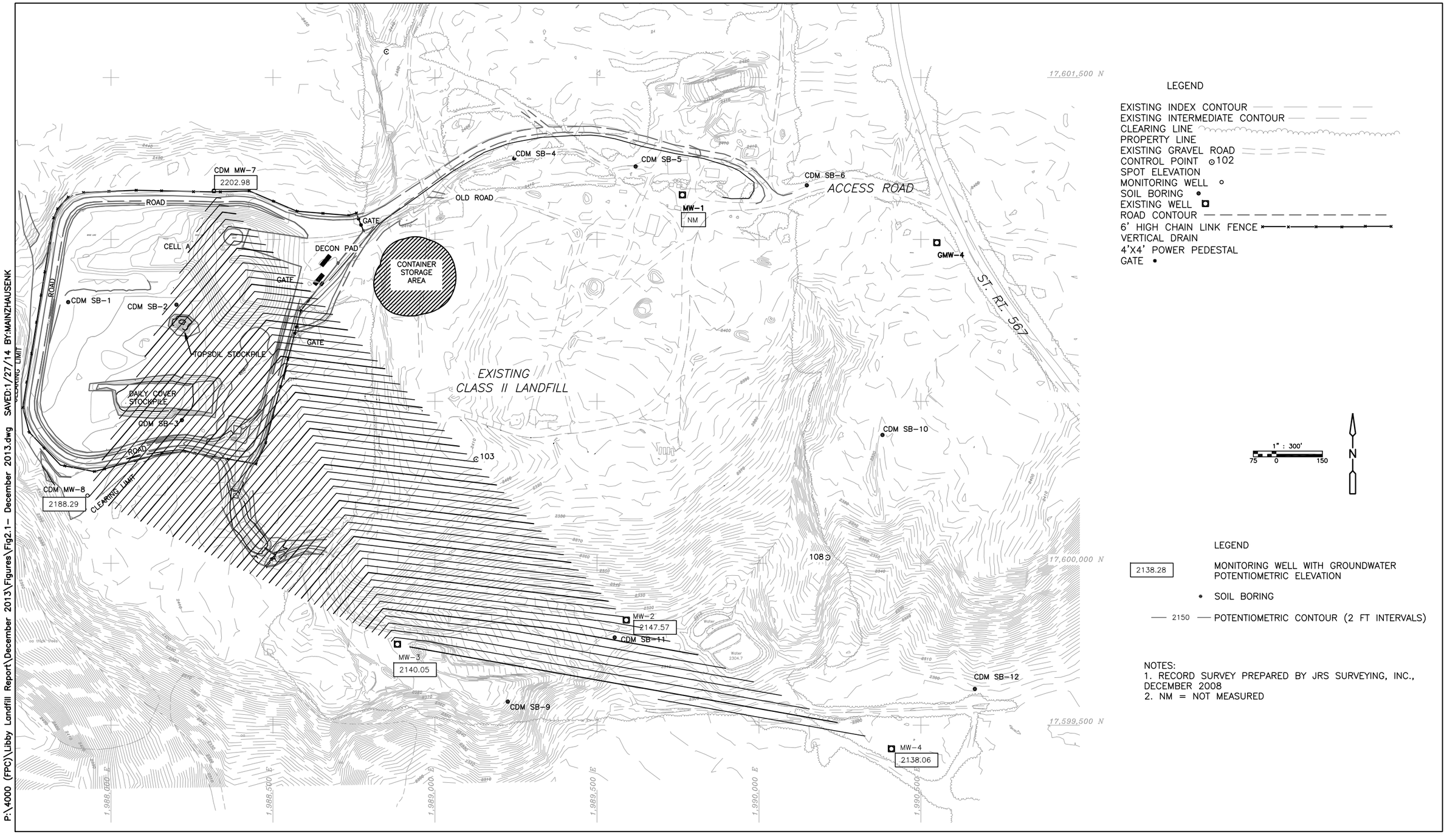

LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- CLEARING LINE
- PROPERTY LINE
- EXISTING GRAVEL ROAD
- CONTROL POINT ⊙102
- SPOT ELEVATION
- MONITORING WELL ○
- SOIL BORING ●
- EXISTING WELL ◘
- ROAD CONTOUR
- 6' HIGH CHAIN LINK FENCE
- VERTICAL DRAIN
- 4'X4' POWER PEDESTAL
- GATE ●

1" : 300'
75 0 150

N

LEGEND

2138.28 — MONITORING WELL WITH GROUNDWATER POTENTIOMETRIC ELEVATION

● SOIL BORING

2150 — POTENTIOMETRIC CONTOUR (2 FT INTERVALS)

NOTES:
1. RECORD SURVEY PREPARED BY JRS SURVEYING, INC., DECEMBER 2008
2. NM = NOT MEASURED

CDM Smith

Figure No. 2–1
GROUNDWATER POTENTIOMETRIC SURFACE, December 17, 2013

Section 3
Analytical Results

3.1 Laboratory Analytical Results

Table 3-1 lists laboratory analytical results for monitoring wells CDM-MW7 (sample IR-45188) and CDM-MW8 (sample IR-45185) and corresponding Montana Circular DEQ-7 water quality standards. Analytical results for these groundwater samples and associated quality control samples are located in Appendix B. Quality control samples include a field duplicate of CDM-MW8 (sample IR-45186), two trip blank (samples TB-1 and TB-4), and a field blank (sample IR-45187). Table 3-1 lists the groundwater quality standard as "nondegradation" (Non Deg) for parameters for which human health standards are not listed in Montana Circular DEQ-7. Sample results qualified as estimated because of concentrations below the practical reporting limit (PQL) are not considered.

Non-Metals

Non-metals detected at or above the laboratory reporting limits but below the Montana Circular DEQ-7 water quality standard include nitrate/nitrite and sulfate.

The samples from both locations were also analyzed for asbestos by U.S. Environmental Protection Agency Method 100.2. Asbestos was not detected in the samples.

Metals

Groundwater analyses for metals at monitoring wells MW-2, MW-3, and MW-4 were eliminated after the December 2003 sampling event per DEQ's direction (based on the long record of generally below detection metal concentrations), so no comparisons to metals results from the Class II Landfill can be made.

Barium was reported in the sample results for CDM-MW7 and CDM-MW8 at concentrations of 31 and 100 µg/L respectively which are below the Montana Groundwater Quality Standard of 1,000 µg/L. Copper was reported in both samples, CDM-MW7 and CDM-MW8, at concentrations 1.4 and 2.9 µg/L respectively which are below the Montana Groundwater Quality Standard of 1,300 µg/L. Iron was reported in samples CDM-MW7 and CDM-MW8 at concentrations of 230 and 260µg/L respectively. There is no Montana Groundwater Quality Standard for iron. Cadmium was reported at concentrations of 0.13µg/L in the sample result for CDM-MW7. Zinc was reported in samples CDM-MW7 and CDM-MW8 at concentrations of 16 and 49µg/L respectively which are below the Montana Groundwater Quality Standard of 2,000 µg/L.

Volatile Organic Compounds

No volatile organic compounds were reported in this sampling event above the reporting limit.

Table 3-1
Groundwater Analytical Results, June 25, 2013.
Lincoln County Class IV Asbestos Landfill

Parameter	Monitoring Well CDM-MW7 (µg/L)	Monitoring Well CDM-MW8 (µg/L)	RL (µg/L)	MT Groundwater Quality Standards (µg/L)
Non-Metals				
Asbestos	ND	ND	0.17 MFL	7,000,000 fibers/L (fibers>10 microns)
Chemical Oxygen Demand	ND	ND	10,000	Non Deg
Chloride	ND	ND	1,000	Non Deg
Cyanide, Total	ND	ND	10	200
Nitrate/Nitrite as N	50	76	20	10,000
Sulfate	6,900	7,800	1,000	Non Deg
Gasoline Range Organics	ND	ND	75	Non Deg (DEQ uses volatile petroleum hydrocarbon [VPH] method)
Diesel Range Organics	ND	ND	100	Non Deg (DEQ uses extractable petroleum hydrocarbon [EPH] method)
Metals				
Antimony	ND	ND	1.0	6
Arsenic	ND	ND	1.0	10
Barium	31	100	5.0	1,000
Beryllium	ND	ND	0.40	4
Cadmium	0.13	ND	0.10	5
Chromium	ND	ND	5.0	100
Cobalt	ND	ND	5.0	Non Deg
Copper	1.4	2.9	1.0	1,300
Iron	230	260	20	See Note 2
Lead	ND	ND	1.0	15
Mercury	ND	ND	0.100	2
Nickel	ND	ND	5.0	100
Selenium	ND	ND	1.0	50
Silver	ND	ND	1.0	100
Thallium	ND	ND	0.50	2
Vanadium	ND	ND	5.0	Non Deg
Zinc	16	49	10	2,000
VOCs				
Acetone	ND	ND	10	Non Deg
Acrylonitrile	ND	ND	5.0	0.51
Benzene	ND	ND	0.50	5
Bromochloromethane	ND	ND	0.50	Non Deg
Bromodichloromethane	ND	ND	0.50	10
Bromoform	ND	ND	0.50	80
Bromomethane	ND	ND	0.50	10
Carbon disulfide	ND	ND	0.50	Non Deg
Carbon tetrachloride	ND	ND	0.50	3
Chlorobenzene	ND	ND	0.50	100

Parameter	Monitoring Well CDM-MW7 (µg/L)	Monitoring Well CDM-MW8 (µg/L)	RL (µg/L)	MT Groundwater Quality Standards (µg/L)
Chlorodibromomethane	ND	ND	0.50	4
Chloroethane	ND	ND	0.50	Non Deg
Chloroform	ND	ND	0.50	70
Chloromethane	ND	ND	0.50	30
1, 2-Dibromo-3-Chloropropane (DBCP)	ND	ND	0.50	0.2
1, 2-Dibromoethane (EDB)	ND	ND	0.50	0.004
Dibromomethane	ND	ND	0.50	Non Deg
1, 2-Dichlorobenzene	ND	ND	0.50	600
1, 4-Dichlorobenzene	ND	ND	0.50	75
trans-1, 4-Dichloro-2-butene	ND	ND	2.0	Non Deg
Dichlorodifluoromethane	ND	ND	0.50	1,000
1, 1-Dichloroethane	ND	ND	0.50	0.0031
1, 2-Dichloroethane	ND	ND	0.50	4
1, 1-Dichloroethene	ND	ND	0.50	0.6
cis-1, 2-Dichloroethene	ND	ND	0.50	70
trans-1, 2-Dichloroethene	ND	ND	0.50	100
1, 2-Dichloropropane	ND	ND	0.50	5
cis-1, 3-Dichloropropene	ND	ND	0.50	4
trans-1, 3-Dichloropropene	ND	ND	0.50	2
Ethylbenzene	ND	ND	0.50	700
2-Hexanone (Methyl butyl ketone)	ND	ND	10	Non Deg
Iodomethane	ND	ND	5.0	Non Deg
4-Methyl-2-pentanone (Methyl isobutyl ketone)	ND	ND	10	Non Deg
Methylene chloride	ND	ND	0.50	5
Styrene	ND	ND	0.50	100
1, 1, 1, 2-Tetrachloroethane	ND	ND	0.50	Non Deg
1, 1, 2, 2-Tetrachloroethane	ND	ND	0.50	2
Tetrachloroethene	ND	ND	0.50	5
Toluene	ND	ND	0.50	1,000
1, 1, 1-Trichloroethane	ND	ND	0.50	200
1, 1, 2-Trichloroethane	ND	ND	0.50	3
Trichloroethene	ND	ND	0.50	5
Trichlorofluoromethane	ND	ND	0.50	10,000
1, 2, 3-Trichloropropane	ND	ND	0.50	Non Deg
Vinyl acetate	ND	ND	1.0	Non Deg
Vinyl chloride	ND	ND	0.50	0.2
Xylenes	ND	ND	0.50	10,000

Notes:

1- **Non Deg** refers to Montana DEQ nondegradation rules 17.30.701 et seq. Administrative Rules of Montana (ARM). The purpose of the rule is to protect high quality state ground and surface waters, which are those waters whose quality is higher than the established standards.
2- With the October 2012 revisions to the Montana Circular DEQ-7 water quality standards, the iron secondary maximum contaminant level of 300 micrograms per liter was eliminated. The previous standards where based on aesthetic properties such as taste, odor, and staining.
3- The Montana Circular DEQ-7 water quality standards for acrylonitrile and 1, 2-Dibromoethane are below the laboratory reporting limit. The water quality standards for these compounds are lower than standard laboratory limits, and the required reporting value listed in the circular are also greater than the water quality standard.

ND = Not Detected. Result was less than the laboratory reporting limit.
MFL = million fibers/Liter
RL = reporting limit
U = undetected at the concentration listed

3.2 Quality Assurance

Holding times and laboratory duplicate analyses were acceptable for all samples. The recovery of method 8260 surrogate 1,2-dichloroethane-d4, in sample 1R-45186, CDM-MW8 Duplicate, was 68%, below the QC limit of 70%. The surrogate recovery was acceptable in sample CDM-MW8 and no qualifiers were applied. The recovery of VPH surrogate 2,5-dibromotoluene was below QC criteria in samples CDM-MW8 Duplicate with a 27% recovery and a QC limit of 70-130%. This is the field duplicate of sample CDM-MW8, which was also not detected for VPH and the surrogate recovery was compliant. No qualifiers have been applied to the QC sample CDM-MW8 Duplicate. The VPH surrogate exceeded the QC limit in the analysis of CDM-MW7 with a 148% recovery. VPH compounds were not detected and no qualifiers were applied. The VPH matrix spike recoveries were high with over 200% recoveries for the surrogate and spikes. The laboratory control sample results were all within criteria and in accordance with the functional guidelines the samples were not qualified on the basis of the high matrix spike recoveries.

Data were evaluated in accordance with the method requirements and the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008) and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (EPA 2010). The analysis of the samples was found to be compliant with the requirements of both the method and the QAPP. All data was found to be usable. The data evaluation report and corresponding data is included in Appendix B.

Trip Blanks

Two trip blanks were collected for this sampling event. The trip blanks were only tested for VOCs and no target compounds were detected.

Field Blank

One field blank (sample 1R-45187) was collected for this sampling event to assess the decontamination procedure. Acetone was reported in the field blank, at 22 µg/L but was not reported in any other sample. Nitrate-nitrite was reported in the field blank at 53 µg/L. This is close to the concentration of nitrate-nitrite reported in the samples and according to the functional guidelines the sample data would be qualified as not detected at the level nitrate-nitrite was reported. However, nitrate-nitrite was not detected in the method blanks and based on professional judgment, the data is presented unqualified.

Field Duplicate Samples

Field duplicates are collected to assess field and laboratory precision. One field duplicate sample was collected from monitoring well CDM-MW8 (sample 1R-45186) and submitted for analysis with the natural samples. Detected results, above the laboratory reporting limits, are compared to the parent sample in Table 3-2.

Table 3-2 CDM-MW8 Duplicate Sample Comparison, December 17, 2013.
Lincoln County Class IV Asbestos Landfill

Parameter	CDM-MW8	Duplicate	RL	RPD	Control Limit RPD
Nitrite-nitrate	76	77	0.50	1.3	20
Sulfate	7,800	7,900	1,000	1.27	20
Barium	100	98	5.0	2.0	20
Copper	2.9	2.9	1,300	0	20
Iron	260	320	20	**20.7**	20
Zinc	49	47	2,000	4.17	20

Note:
RL = Reporting Limit
RPD = Relative Percent Difference
NA= not applicable, concentrations less than 5 times the RL
Bold= above control limits

Field duplicate data quality objectives are not specified in the Lincoln County Class IV Asbestos Landfill Operations Plan. Laboratory duplicate criteria, according to the EPA's Contract Laboratory Program, is ±20 relative percent difference when the concentration is greater than five times the reporting limit. The reporting limit is used as the criteria for the difference between the two results if either value is <5x the reporting limit. Iron results were slightly above the 20% criteria, as shown in Table 3-2. No qualifiers have been applied.

Section 4
Deviations from SAP

During the June 2013 and the December 2013, dedicated bladder pumps were used to collect low flow water quality samples from monitoring wells CDM-MW 7 and CDM-MW-8. The change was made to improve efficiency and reduce to potential for cross contamination during sampling events. An addendum to the Lincoln County Class IV Asbestos Landfill Operational Plan-Revision 2 (CDM, 2008) will be submitted to the Agencies.

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Section 5
Data Analysis

5.1 Intra-well Trends

Groundwater Levels

A summary chart of historical groundwater elevations graphed on Chart 1- Appendix A does not show any trends.

Data from the December 2013 sampling event indicate that groundwater elevations increased slightly in all wells when compared to elevations from the June 2013 sampling event. (See Chart 1.)

Field Parameters

Field parameters (pH, specific conductance, dissolved oxygen, and temperature) were measured for CDM-MW7 and CDM-MW8 during the field activities by CDM Smith. No trends could be identified for pH, specific conductance and dissolved oxygen. Temperature measurements at CDM-MW8 and CDM-MW7 appear to be decreasing for the fourth consecutive sampling event. This is probably the result from changing from a submergible pump to a bladder pump. Charts showing the collected field parameters are included in Appendix A.

Dissolved Metals

Dissolved barium, dissolved copper, dissolved iron and dissolved zinc were detected in CDM-MW7 and CDM-MW8. Dissolved cadmium was detected in CDM-MW7. Since the October 2012 revision to the Montana Circular DEQ-7 water quality standards, iron no longer has a human health standard. All results prior to June 2013 for barium and iron were non-detect. Reporting limits for historical data and concentrations for current data are shown on Charts 6 and 7. In addition, cadmium, copper and zinc were detected in the samples at concentrations far below the groundwater standards. This is the first time that unqualified results have been reported for these metals.

Detected Non-Metals

There were no parameters that consistently had detectable significant results over multiple sampling events; therefore, no trend evaluation is presented.

5.2 Inter-well Comparison

Water levels and field parameters were compared in both monitoring wells. Dissolved oxygen and specific conductance measurements were consistently lower in CDM-MW7 compared to CDM-MW8. Temperature measurements decreased in both wells since the June 2012 sampling event; probably due to the change is sampling pumps. The pH measurement is consistently lower in CDM-MW8 compared to CDM-MW7.

The December 2013 groundwater flow direction at the Class IV Asbestos Landfill was evaluated using depth to groundwater measurements from five monitoring wells. The groundwater flow direction is shown in Figure 2-1 and is generally to the southerly direction. The interpreted groundwater flow direction is consistent with previous sampling events.

5.3 Comparison to Standards

During this sampling event, no exceedances were reported for dissolved metals, non-metals, or VOCs (See Table 3-2).

5.4 Summary

Results of the December 2013 sampling event showed no exceedances for dissolved metals, non-metals or VOCs when compared to the Montana Circular DEQ-7 water quality standards. Temperature will be closely monitored due to unusual measurement in the past five events.

Section 6
References

Camp Dresser & McKee, Inc. 2008. *Draft Revised Lincoln County Class IV Asbestos Landfill Operations Plan.* February.

CDM, Inc. 2013. *June 2013 Groundwater Monitoring Report, Lincoln County Class IV Asbestos Landfill, Lincoln County, Montana.* August.

EPA. 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review.* EPA–540/R–10/011. January.

EPA. 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA–540/R–08/01. June.

Montana Department of Environmental Quality. 2012. *Circular DEQ-7, Montana Numeric Water Quality Standards.* February.

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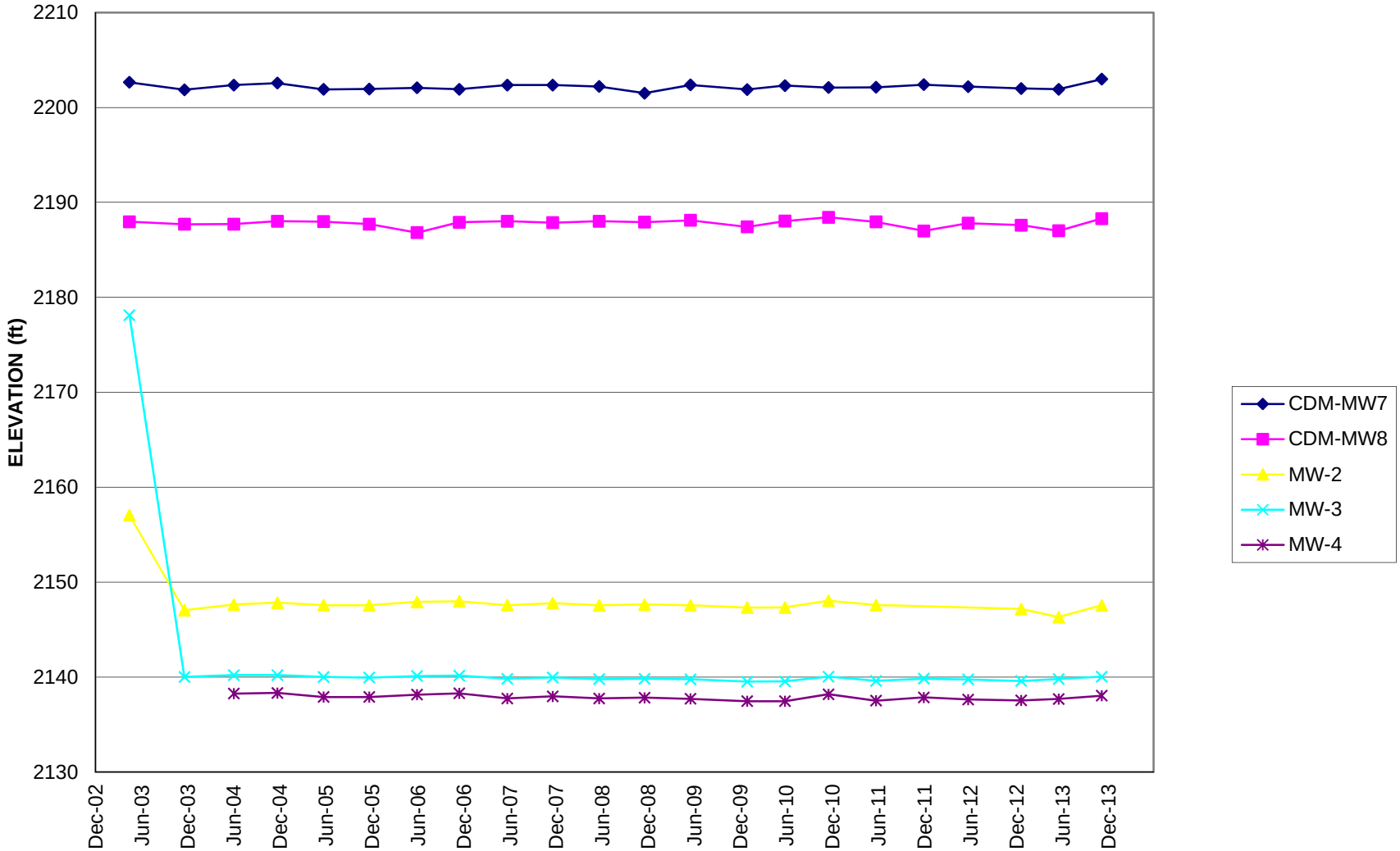
Appendix A – Libby Asbestos Class IV Landfill Charts

Chart 1 - Libby Asbestos Class IV Landfill Groundwater Elevations



Note: CDM-MW7 and CDM MW8 were resurveyed November 2013.

Chart 2 - Libby Asbestos Class IV Landfill - pH

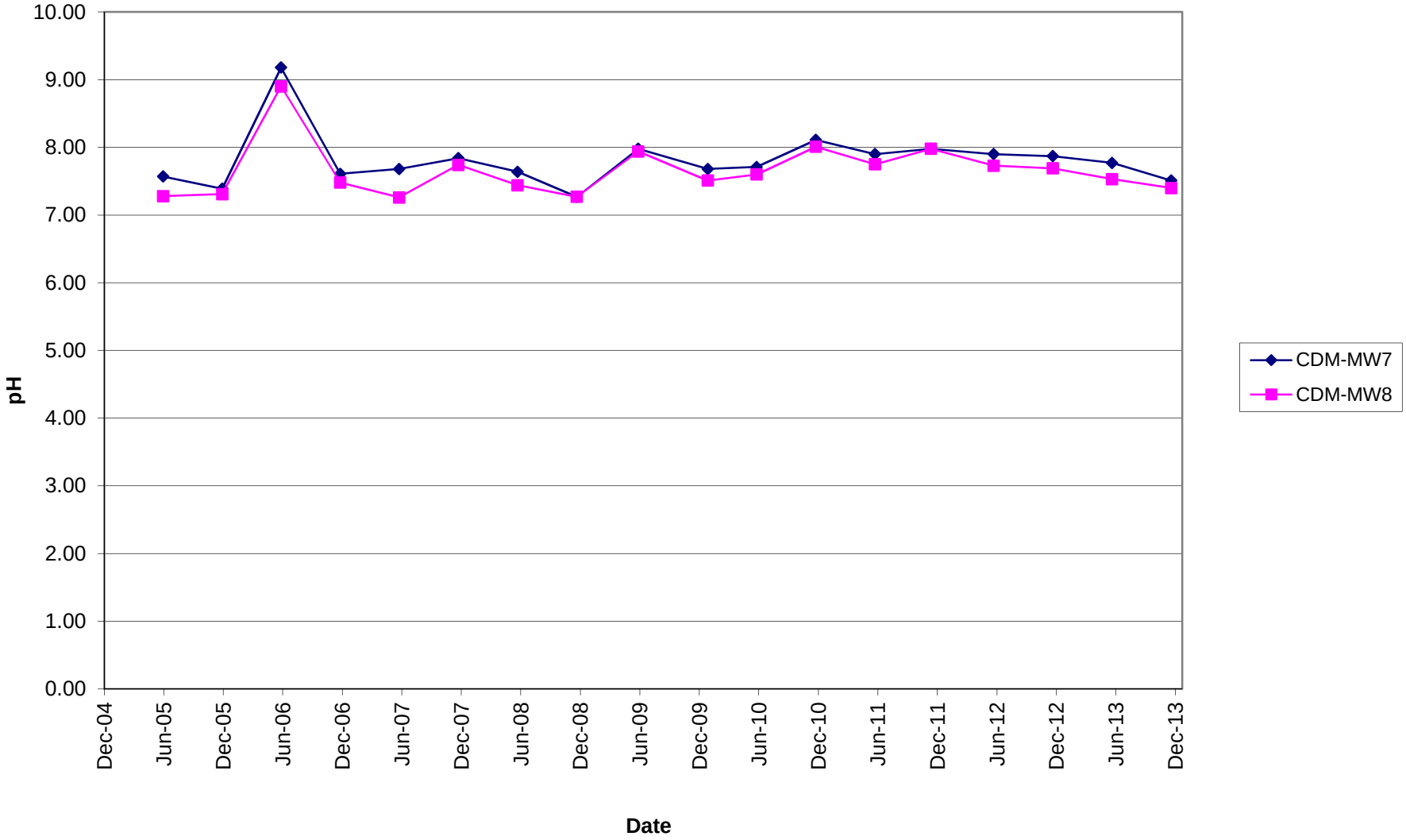


Chart 3 - Libby Asbestos Class IV Landfill - Specific Conductivity

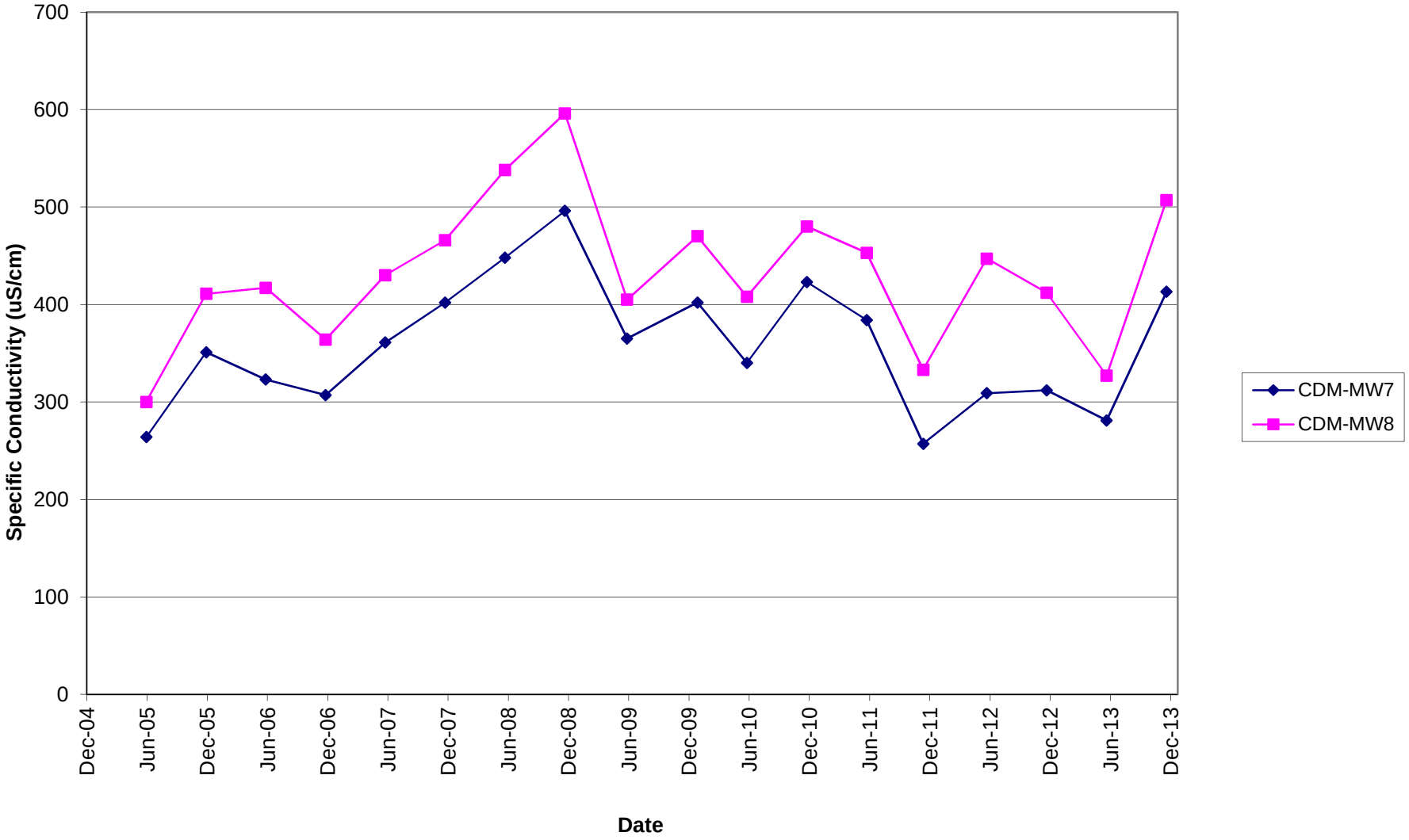


Chart 4 - Libby Asbestos Class IV Landfill - Temperature

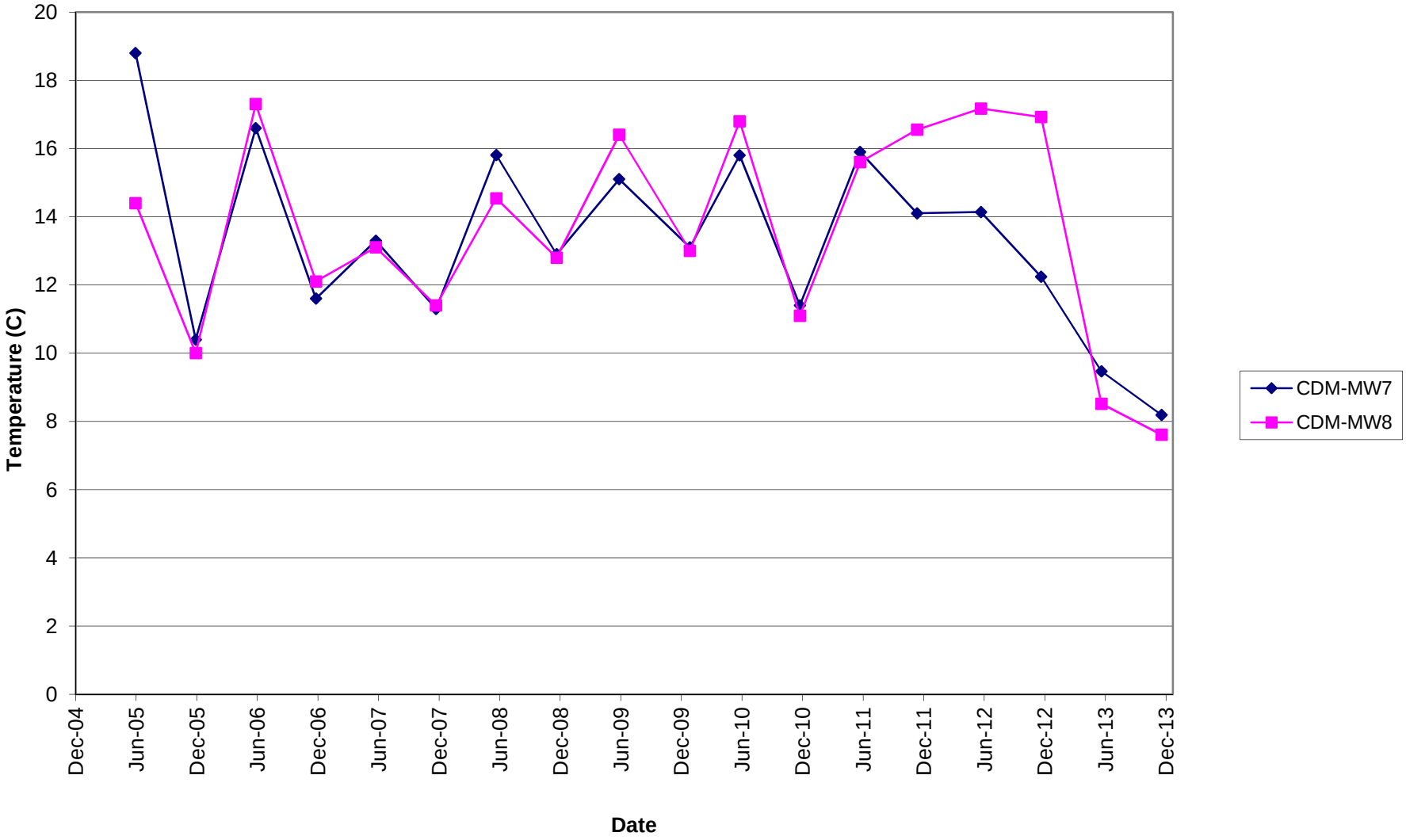


Chart 5- Libby Asbestos Class IV Landfill - Dissolved Oxygen

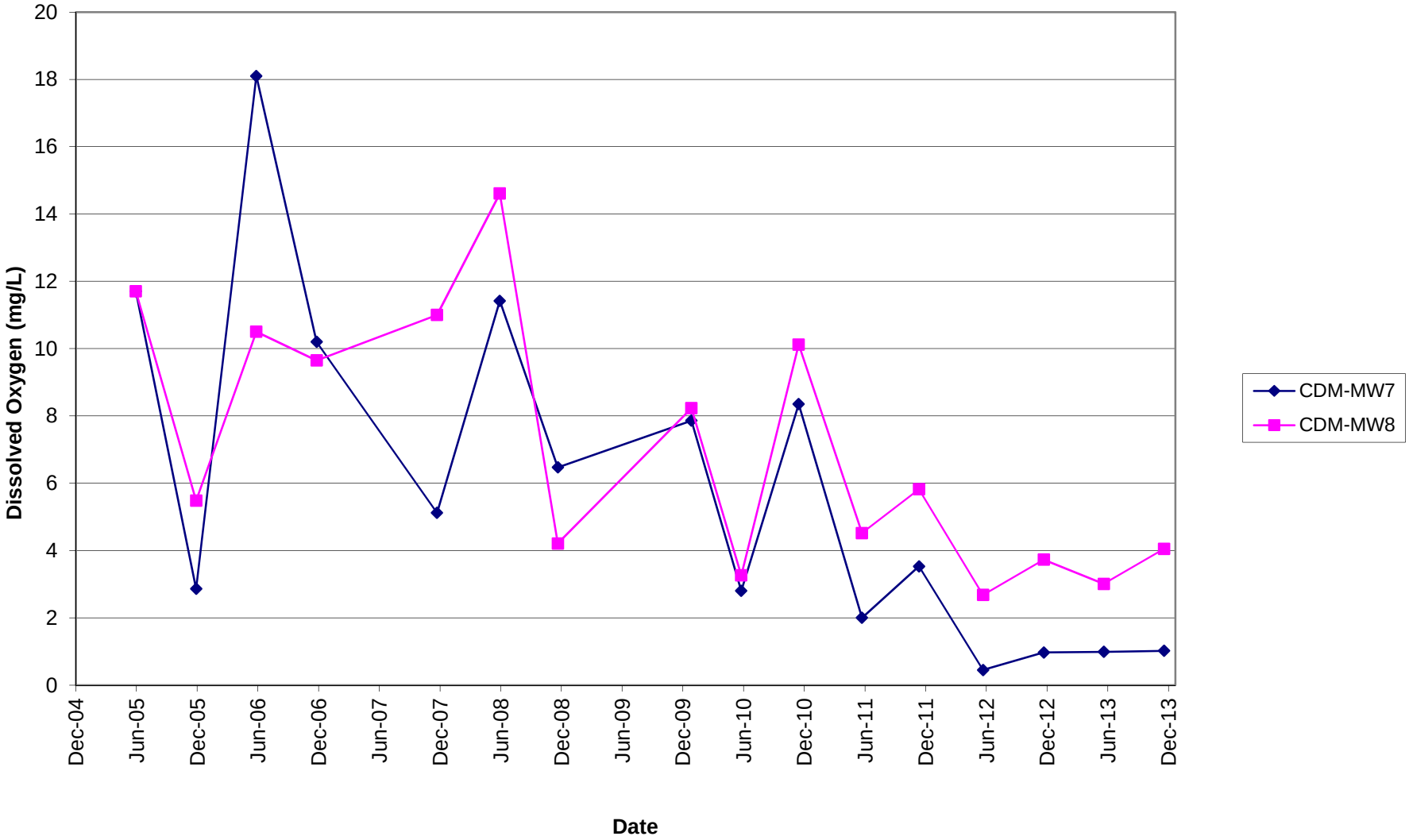


Chart 6 - Libby Asbestos Class IV Landfill - Barium

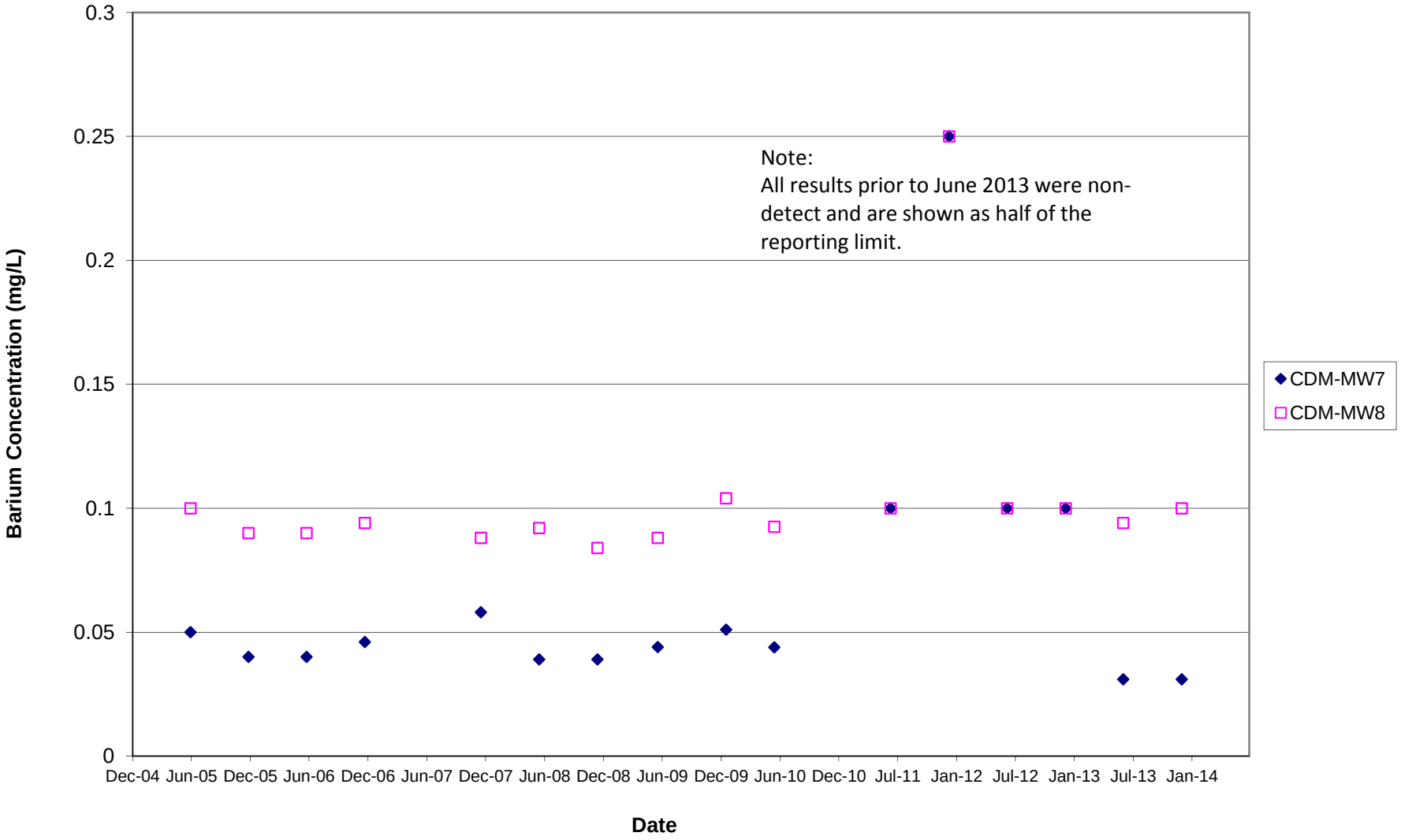
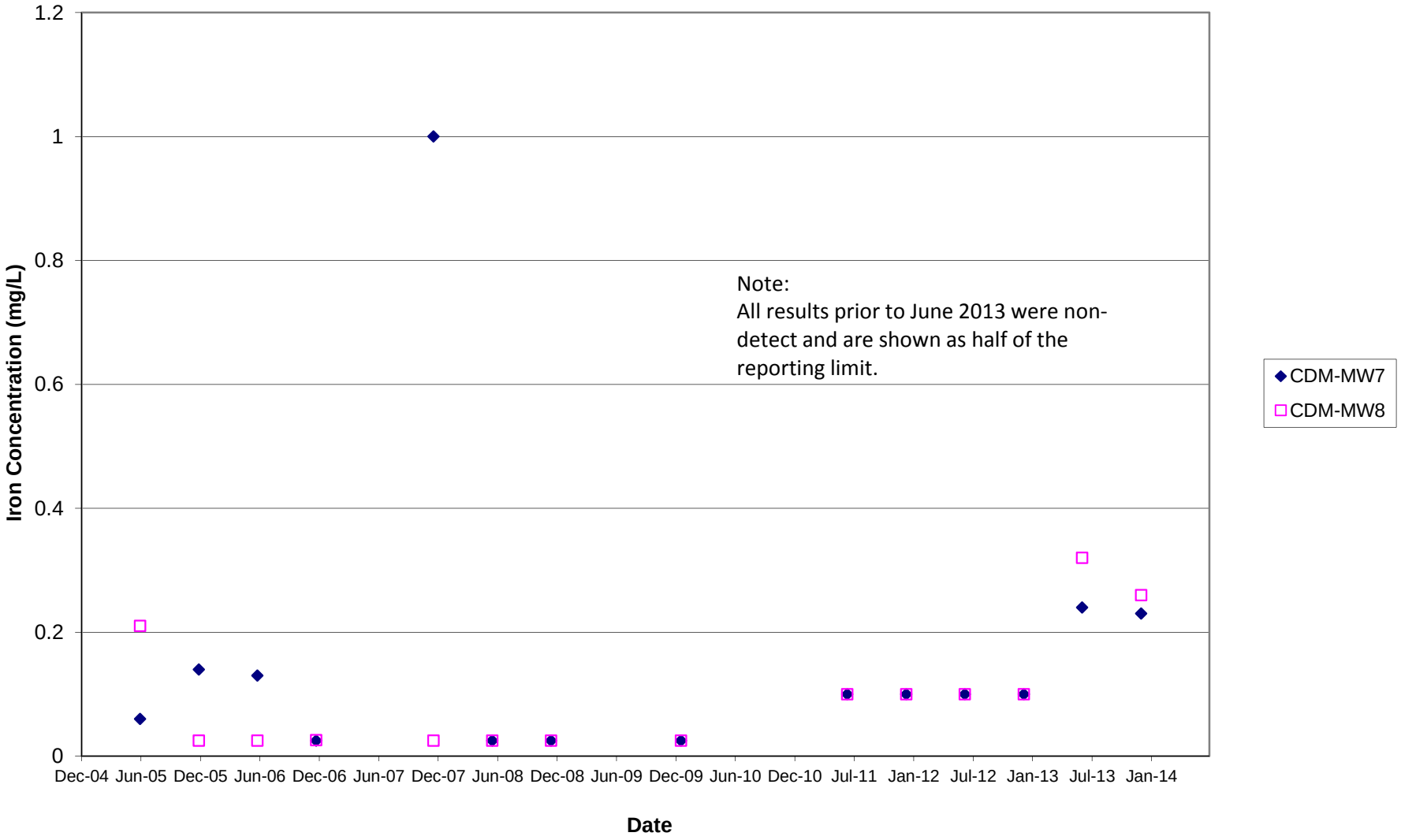


Chart 7 - Libby Asbestos Class IV Landfill - Iron



Appendix B - Laboratory Analytical Reports

December 2013 Sampling Event

DATA EVALUATION REPORT

Project:	Lincoln County Groundwater Sampling
Data Validator:	Kimberly Zilis
Sample Delivery Group:	OL19041
Laboratory:	Shealy Environmental Services, Inc., Fairfax, VA
Sample Date:	December 17 – 18, 2013, 2013
Evaluation Date:	January 31, 2014

On December 17 and 18, 2013, CDM Federal Programs Corporation (CDM Smith) collected groundwater samples in support of the Lincoln County semiannual groundwater monitoring program. Two water samples, one field duplicate, a field blank and two trip blanks were delivered to Shealy Environmental Services on December 19, 2013.

CDM evaluated the data received in accordance with the method requirements and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2008) and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (EPA 2010). The samples were analyzed according to the following methods:

Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (SW-846). Third Edition, Final Update III

- 8260B - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- 6020A - Inductively Coupled Plasma-Mass Spectrometry
- 7470A - Mercury in Liquid Waste (Manual Cold-Vapor Technique)
- 9010C and 9012B - Total and Amenable Cyanide: Distillation

Methods for Chemical Analysis of Water and Wastes, 3rd Edition, March 1983

- 300.0 – Determination of Inorganic Anions in Drinking Water by Ion Chromatography
- 353.2 – Nitrogen, Nitrate-Nitrite

Standard Methods for the Examination of Water and Wastewater, 21st Edition, 2005

- SM5220D – Chemical Oxygen Demand (COD)

Massachusetts Department of Environmental Protection Division of Environmental Analysis, May 2004

- Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
- Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)

The field samples and corresponding laboratory sample identifiers included in this package are as follows:

INDEX ID	FIELD ID	LABORATORY SAMPLE ID	MATRIX
IR-45185	MW-8	OL19041-001	Water
IR-45186	MW-8 Dup	OL19041-002	Water
IR-45187	Field Blank	OL19041-003	Water
IR-45188	MW-7	OL19041-004	Water
TB-1	Trip Blank	OL19041-005	Water
TB-4	Trip Blank	OL19041-006	

REVIEW SUMMARY

I. Deliverables

All deliverables were present.
YES
Comments: A full raw data package was not required. Sample results and laboratory Quality Control (QC) results were submitted by the laboratory and evaluated by CDM.

II. Preservation and Holding Times

Samples were preserved appropriately and all holding times were met.
YES

III. Instrument Calibration

Calibration documentation was not provided for review.

IV. Method Blank Analysis Results

No target compounds were detected in the method blank at or above the reporting limit.
YES
Comments: Results were reported as estimated between the method detection limit (MDL) and the practical reporting limit (PQL). No target analytes were reported at concentrations greater than the PQL.

V. Other Blank Analysis Results

No target compounds were detected in other blanks at or above the reporting limit.
NO
Comments: A field blank was created in the field consisting of distilled water and was analyzed as a sample for the full suite of analyses. A trip blank traveled with the volatile samples, and was analyzed for volatile compounds only. Acetone was reported in the field blank, at 36 µg/L but was not reported in any other sample. Carbon disulfide was reported in the field and the trip blank, and all samples, at approximately 1.0 ppb with a reporting limit of 0.5 µg/L. This compound was qualified as undetected in all normal samples.

VI. Surrogate Compound Results

All surrogate compound recovery results met laboratory defined QC criteria.

NO

Comments: The recovery of surrogate 1,2-dichloroethane-d4, in sample 1R-45186, CDM MW-8 Duplicate, was 68%, below the QC limit of 70%. The surrogate recovery was acceptable in sample CDM MW-8 and no qualifiers were applied. The recovery of VPH surrogate 2,5-dibromotoluene was below QC criteria in samples CDM-MW8 Duplicate with a 27% recovery and a QC limit of 70-130%. This is the field duplicate of sample CDM-MW8, which was also not detected for VPH and the surrogate recovery was compliant. No qualifiers have been applied to the QC sample CDM-MW8 Duplicate. The VPH surrogate exceeded the QC limit in the analysis of CDM-MW7 with a 148% recovery. VPH compounds were not detected and no qualifiers were applied.

VII. Matrix Spikes/Matrix Spike Duplicates (MS/MSDs)

Matrix Spike analyses were performed at a frequency of not less than 5% of sample analyses.

All MS/MSD results met specified recovery and precision limits.

NO

Comments: The VPH matrix spike recoveries were high with over 200% recoveries for the surrogate and spikes. The laboratory control sample (LCS) results were all within criteria and, in accordance with the functional guidelines, the samples were not qualified on the basis of the high matrix spike recoveries. Raw data was not provided. The sample results were not detected, the LCSs were within criteria. A laboratory spiking error is suspected.

VIII. Field Duplicates

Field duplicates were collected at a frequency of not less than 5% of sample analyses. The RPD between the native sample and the field duplicate was less than 20% when the values were greater than 5 times the reporting limit. When either the parent or the duplicate value is less than 5 times the reporting limit, the reporting limit is control limit for the difference between the two values. limits.

NO

Comments: Index ID IR-45186 is a field duplicate of IR-45185. All field duplicate comparisons were within criteria with the exception of iron with a 20.7% RPD. Field duplicate data quality objectives are not specified in the Lincoln County Class IV Asbestos Landfill Operations Plan. The NFGs suggest ±20 relative percent difference for water laboratory duplicates.

IX. Laboratory Control Sample

Target analytes were spiked into a Laboratory Control Sample (LCS) and recoveries were within the laboratory defined control limits.

YES

X. Laboratory Duplicates

Laboratory duplicates were performed and recoveries were within the laboratory defined control limits.

NA

Comments: Laboratory duplicates were not reported.

XI. Detection Limits

All detection limits met specified reporting limits.
YES

XII. Overall Assessment of Data

The analyses of the samples were found to be compliant with the requirements of both the method and the QAPP, except where otherwise noted. No qualification was necessary based on overall system performance.
YES

SAMPLE ID

Status	ANALYZED
EPA Sample Number	1R-45185
Sample Tag	AL1
QA Type	NOT QC
Lab Sample Number	271301061-0001
Matrix	Water
Analysis Method	TEM-ISO
Analysis Method SOP*	ISO 10312

**in accord with LB-000020*

PARAMETERS

Effective filter area	1295.0	mm^2
Filter Pore Size	0.20	um
Number of Grid Openings (amphibole)	6	
Number of Grid Openings (chrysotile)	6	
Grid opening area	0.0129	mm^2
F-factor	1	
First dilution factor	n/a	
Second dilution factor	n/a	
Total dilution factor	1	
Volume applied to filter	100	mL
Est. particulate loading on filter	15%	

Recording Rules:	Min. AR	Min length (um)	Min width (um)
	3:1	0.5	0

Stopping Rules:	Target S (L)-1	Max AE (mm^2)	Max N
	200,000		100

AE = area examined

WATER TEM RESULTS:

Metric	LA		OA		CH		Total Asbestos	
	All	> 10 um	All	> 10 um	All	> 10 um	All	> 10 um
Structure Count	0	0	0	0	0	0	0	0
Concentration (s/L)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sensitivity $(L)^{-1}$	1.7E+05		1.7E+05		1.7E+05		1.7E+05	

Conc = Count * Sensitivity

Sensitivity = EFA / (GOs Counted * GO Area * Volume * F-Factor)

sensitivity for total asbestos is set equal to LA sensitivity

SAMPLE ID

Status	ANALYZED
EPA Sample Number	1R-45188
Sample Tag	AL1
QA Type	NOT QC
Lab Sample Number	271301061-0004
Matrix	Water
Analysis Method	TEM-ISO
Analysis Method SOP*	ISO 10312

**in accord with LB-000020*

PARAMETERS

Effective filter area	1295.0	mm^2
Filter Pore Size	0.20	um
Number of Grid Openings (amphibole)	6	
Number of Grid Openings (chrysotile)	6	
Grid opening area	0.0129	mm^2
F-factor	1	
First dilution factor	n/a	
Second dilution factor	n/a	
Total dilution factor	1	
Volume applied to filter	100.1	mL
Est. particulate loading on filter	10%	

Recording Rules:	Min. AR	Min length (um)	Min width (um)
	3:1	0.5	0

Stopping Rules:	Target S (L)-1	Max AE (mm^2)	Max N
	200,000		100

AE = area examined

WATER TEM RESULTS:

Metric	LA		OA		CH		Total Asbestos	
	All	> 10 um	All	> 10 um	All	> 10 um	All	> 10 um
Structure Count	0	0	0	0	0	0	0	0
Concentration (s/L)	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sensitivity $(L)^{-1}$	1.7E+05		1.7E+05		1.7E+05		1.7E+05	

Conc = Count * Sensitivity

Sensitivity = EFA / (GOs Counted * GO Area * Volume * F-Factor)

sensitivity for total asbestos is set equal to LA sensitivity

CDM Smith - Libby Field Office
60 Port Blvd Ste 201, Libby, MT
CarrierName: hand delivered
No of Samples: 4

CHAIN OF CUSTODY RECORD
Libby Asbestos Investigation EPA Region 8
AirbillNo: NA
DateShipped: 12/19/2013

No: 24701
Lab: EMSL27
Lab Address: 107 W 4th Street
Lab_Address2: Libby, MT 59923

Lab #	Sample #	Tag	Sample Date	Matrix	Vol/L Area/cm2	Filter Pore Size	TAT Days	Analyses	Media Code	Comments
	1R-45185	AL1	12/17/2013	Water			10	TEM-ISO	A	
	1R-45186	AL1	12/17/2013	Water			10	TEM-ISO	A	
	1R-45187	AL1	12/18/2013	Water			10	TEM-ISO	A	
	1R-45188	AL1	12/18/2013	Water			10	TEM-ISO	A	

Special Instructions: Revised TAT days from "3 days" to "10 days" - 12-23-13 pjh (CDM Smith)

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

CDM Smith - Libby Field Office

CHAIN OF CUSTODY RECORD

No: 24701

From: 60 Port Blvd Ste 201, Libby MT 59923
AirBill: NA
No of Samples: 4

Libby Asbestos Investigation EPA Region 8
CarrierName: hand delivered
DateShipped: 12/19/2013

Send To: EMSL27
107 W 4th Street
Libby, MT 59923

	Sample #	Tag	Sample Date	Matrix	Vol/L Area/cm2	Filter Pore Size (um)	TAT Days	Analyses	LV ID	Media Code	Comments	
✓	1R-45185	AL1	12/17/2013	Water			~~3~~ 10	TEM-ISO		A		
✓	1R-45186	AL1	12/17/2013	Water			~~3~~ 10	TEM-ISO		A		
✓	1R-45187	AL1	12/18/2013	Water			~~3~~ 10	TEM-ISO		A		
✓	1R-45188	AL1	12/18/2013	Water			~~3~~ 10	TEM-ISO		A		

12/23/13 gjh

Remarks: Revised TAT days from 3 days to 10 days 12-23-13 gjh CDM Smith

A.R.S.S.: LCLGW1211 - Rev 0
TRANSFERRED FROM COC #

Relinquished by (Signature and Company)	Date/Time	Received by (Signature and Company)	Date/Time	Sample Condition Upon Receipt
D. Haugen CDM Smith	12/19/13 12:22	[illegible] EMSL27	12/19/13 1722hrs	ok/accept

Chain of Custody Record

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Number 06553

Client: CDM Smith	Report to Contact: Tracy Dodge	Sampler (Printed Name): Kris Beaudoin	Quote No.: 16105
Address: 60 Port Blvd Ste. 201	Telephone No. / Fax No. / Email: 406-293-8595 x35 Dodgeta@CDMSmith.com	Waybill No.: 799443031005/799443078985 799443086961/799443093780	Page: 1 of 1
City: Libby State: MT Zip Code: 59923	Preservative: 1. Unpres. 4. HNO3 7. NaOH; 2. NaOH/ZnA 5. HCL; 3. H2SO4 6. Na Thio.		Number of Containers / Bottle (See instructions on back) / Preservative
Project Name: Libby Asbestos Site			Lot No.
Project Number: 1110-000-006-AL Sub contract	P.O. Number / Tracking: 14830		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: FF Diss Metals Diss Mercury	VOC	Cl + SO4 NO2 NO3	COD + TOC	EPH	VPH	CN	Remarks / Cooler ID
									1	3	1	1	2	2	11	
									D	A	D	D	T	A	D	
									4	5	1	3	5	5	7	
IR-45185	12/17/13	11:25	G	X					1	3	1	1	2	2	1	
IR-45186	12/17/13	11:35	G	X					1	3	1	1	2	2	1	
IR-45187	12/18/13	09:15	G	X					1	3	1	1	2	2	1	
IR-45188	12/18/13	09:55	G	X					3	9	3	3	6	6	3	
TB-1	12/17/13	NA	NA					X		1						
TB-4	12/18/13	NA	NA					X		1						

Turn Around Time Required (Prior lab approval required for expedited TAT): ☒ Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

QC Requirements (Specify): MS/MSD IR-45188

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler: KTD	12-12-13	1135	1. Received by: Tracy Dodge CDMSmith Sample Coordination	12/18/13	1138
2. Relinquished by: Tracy Dodge CDMSmith	12/18/13	1300	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	Date	Time	4. Laboratory Received by	Date	Time

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☐ Yes ☐ No ☐ Ice Pack
Receipt Temp. _____ °C
Temp. Blank ☐ Y / ☐ N

Table 1. Attachment to SOW, Libby Groundwater Analytical Methods and Reporting Limits
Revised 6/21/13

Organics	Method	RL (µg/L)
Volatiles		
1,1,1,2-tetrachloroethane	SW846 8260B	0.50
1,1,1-trichloroethane	SW846 8260B	0.50
1,1,2,2-tetrachloroethane	SW846 8260B	0.50
1,1,2-trichloroethane	SW846 8260B	0.50
1,1-dichloroethane	SW846 8260B	0.50
1,1-dichloroethene	SW846 8260B	0.50
1,2,3-trichloropropane	SW846 8260B	0.50
1,2-dibromo-3-chloropropane	SW846 8260B	0.50
1,2-dibromoethane	SW846 8260B	0.50
1,2-dichlorobenzene	SW846 8260B	0.50
1,2-dichloroethane	SW846 8260B	0.50
1,2-dichloropropane	SW846 8260B	0.50
1,4-dichlorobenzene	SW846 8260B	0.50
2-butanone	SW846 8260B	10
2-hexanone	SW846 8260B	10
4-methyl-2-pentanone	SW846 8260B	10
acetone	SW846 8260B	10
acrylonitrile	SW846 8260B	5.0
benzene	SW846 8260B	0.50
bromochloromethane	SW846 8260B	0.50
bromodichloromethane	SW846 8260B	0.50
bromoform	SW846 8260B	0.50
bromomethane	SW846 8260B	0.50
carbon disulfide	SW846 8260B	0.50
carbon tetrachloride	SW846 8260B	0.50
chlorobenzene	SW846 8260B	0.50
chloroethane	SW846 8260B	0.50
chloroform	SW846 8260B	0.50
chloromethane	SW846 8260B	0.50
cis-1,2-dichloroethene	SW846 8260B	0.50
cis-1,3-dichloropropene	SW846 8260B	0.50
dibromochloromethane	SW846 8260B	0.50
dibromomethane	SW846 8260B	0.50
dichlorodifluoromethane	SW846 8260B	0.50
ethylbenzene	SW846 8260B	0.50
iodomethane	SW846 8260B	0.50
methylene chloride	SW846 8260B	0.50
styrene	SW846 8260B	0.50
tetrachloroethene	SW846 8260B	0.50
toluene	SW846 8260B	0.50
trans-1,2-dichloroethene	SW846 8260B	0.50
trans-1,3-dichloropropene	SW846 8260B	0.50
trans-1,4-dichloro-2-butene	SW846 8260B	2.0
trichloroethene	SW846 8260B	0.50
trichlorofluoromethane	SW846 8260B	0.50
vinyl acetate	SW846 8260B	1.0
vinyl chloride	SW846 8260B	0.50
xylenes (total)	SW846 8260B	0.50
Hydrocarbons		
VPH C5-C8 aliphatics	MA DEP VPH-04-1.1	30.0
VPH C9-C12 aliphatics	MA DEP VPH-04-1.1	30.0
VPH C9-C10 aromatics	MA DEP VPH-04-1.1	30.0
EPH C9-C18 aliphatics	MA DEP EPH-04-1.1	100.0
EPH C19-C36 aliphatics	MA DEP EPH-04-1.1	100.0
EPH C11-C22 aromatics	MA DEP EPH-04-1.1	100.0

Inorganics	Method	RL (µg/L)
Dissolved Metals		
Antimony	ICP/MS 6020	2
Arsenic	ICP/MS 6020	1
Barium	ICP/MS 6020	10
Beryllium	ICP/MS 6020	1
Cadmium	ICP/MS 6020	1
Chromium	ICP/MS 6020	2
Cobalt	ICP/MS 6020	1
Copper	ICP/MS 6020	2
Iron	ICP/MS 6020	200
Lead	ICP/MS 6020	1
Nickel	ICP/MS 6020	1
Selenium	ICP/MS 6020	5
Silver	ICP/MS 6020	1
Thallium	ICP/MS 6020	1
Vanadium	ICP/MS 6020	5
Zinc	ICP/MS 6020	2
Mercury	**SW 846 7470**	**0.2**
Other	**Method**	**RL (µg/L)**
Cyanide	SW846 9010C/9012B	10,000
Chloride	EPA 300.0	1,000
Sulfate	EPA 300.0	1,000
Nitrate + Nitrite	EPA 353.2	50
Chemical Oxygen Demand	SM 5220D	10,000

Definitions:
RL - reporting limit
µg/L - mictrograms per liter
VPH - volatile petroleum hydrocarbons
EPH - extractable petroleum hydrocarbons

From: (406) 293-8595
Tracy Dodge
CDM Smith
60 Port Blvd
Ste. 201
Libby, MT 59923

Origin ID: FCAA

FedEx Express

J13201306280326

Ship Date: 18DEC13
ActWgt: 50.0 LB
CAD: 103830720/INET3430

Delivery Address Bar Code

SHIP TO: (803) 227-2704 BILL SENDER

Nisreen M. Saikaly
Shealy Environmental Services, Inc.
106 Vantage Point Drive

WEST COLUMBIA, SC 29172

Ref #
Invoice #
PO #
Dept #

THU - 19 DEC 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7974 4303 1005

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CDM Smith
60 Port Blvd
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Origin ID: FCAA

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Ship Date: 18DEC13
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106 Vantage Point Drive

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From: (406) 293-8595
Tracy Dodge
CDM Smith
60 Port Blvd
Ste. 201
Libby, MT 59923

Origin ID: FCAA

FedEx Express

J13201306280326

Ship Date: 18DEC13
ActWgt: 50.0 LB
CAD: 103830720/INET3430

Delivery Address Bar Code

SHIP TO: (803) 227-2704 BILL SENDER

Nisreen M. Saikaly
Shealy Environmental Services, Inc.
106 Vantage Point Drive

WEST COLUMBIA, SC 29172

Ref #
Invoice #
PO #
Dept #

THU - 19 DEC 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7974 4308 6961**

XH USCA

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SC-US
CAE

51AG4/99D5/1A9E

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From: (406) 293-8595
Tracy Dodge
CDM Smith
60 Port Blvd
Ste. 201
Libby, MT 59923

Origin ID: FCAA

FedEx Express

J13201306280326

Ship Date: 18DEC13
ActWgt: 50.0 LB
CAD: 103830720/INET3430

Delivery Address Bar Code

SHIP TO: (803) 227-2704 BILL SENDER

Nisreen M. Saikaly
Shealy Environmental Services, Inc.
106 Vantage Point Drive

WEST COLUMBIA, SC 29172

Ref #
Invoice #
PO #
Dept #

THU - 19 DEC 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7974 4309 3780

XH USCA

29172
SC-US
CAE

51AG4/99D5/1A9E

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SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

CDM Federal Programs (CDM Smith)
3201 Jermantown Road
Suite 400
Fairfax, VA 22030
Attention: Tracy Dodge

Project Name: **Libby Asbestos Site**

Project Number: **1110-000-006-AL**

Lot Number: **OL19041**

Date Completed: **01/06/2014**

Nisreen Saikaly
Project Manager

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

OL19041

Case Narrative
CDM Federal Programs (CDM Smith)
Lot Number: OL19041

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Volatile Organic Compounds

The surrogate recovery for sample -002 was outside the acceptance limit. The sample was re-analyzed yielding the same failure. The surrogate recovery is attributed to matrix interference. The sample results are reported and no corrective action is required.

VPH

The surrogate recovery for samples -002 and -004 was outside the acceptance limit. The sample was re-analyzed yielding the same failure. The surrogate recovery is attributed to matrix interference. The sample results are reported and no corrective action is required.

The MS/MSD recoveries in batches 37028 and 37029 were outside acceptance criteria. All other QA/QC criteria for the batch were within acceptance criteria and method control limits. The MS/MSD recovery results are attributed to matrix interference. The associated sample results were reported and no corrective action was required

Sample Summary
CDM Federal Programs (CDM Smith)
Lot Number: OL19041

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	1R-45185	Aqueous	12/17/2013 1125	12/19/2013
002	1R-45186	Aqueous	12/17/2013 1135	12/19/2013
003	1R-45187	Aqueous	12/18/2013 0915	12/19/2013
004	1R-45188	Aqueous	12/18/2013 0955	12/19/2013
005	TB-1	Aqueous	12/17/2013	12/19/2013
006	TB-4	Aqueous	12/18/2013	12/19/2013

(6 samples)

Executive Summary
CDM Federal Programs (CDM Smith)
Lot Number: OL19041

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	1R-45185	Aqueous	Nitrate-Nitrite - N	353.2	0.076		mg/L	5
001	1R-45185	Aqueous	Sulfate	300.0	7.8		mg/L	5
001	1R-45185	Aqueous	Dissolved Barium	6020A	100		ug/L	12
001	1R-45185	Aqueous	Dissolved Copper	6020A	2.9		ug/L	12
001	1R-45185	Aqueous	Dissolved Iron	6020A	260		ug/L	12
001	1R-45185	Aqueous	Dissolved Zinc	6020A	49		ug/L	12
002	1R-45186	Aqueous	Nitrate-Nitrite - N	353.2	0.077		mg/L	14
002	1R-45186	Aqueous	Sulfate	300.0	7.9		mg/L	14
002	1R-45186	Aqueous	Dissolved Barium	6020A	98		ug/L	21
002	1R-45186	Aqueous	Dissolved Copper	6020A	2.9		ug/L	21
002	1R-45186	Aqueous	Dissolved Iron	6020A	320		ug/L	21
002	1R-45186	Aqueous	Dissolved Zinc	6020A	47		ug/L	21
003	1R-45187	Aqueous	Nitrate-Nitrite - N	353.2	0.053		mg/L	23
003	1R-45187	Aqueous	Acetone	8260B	22		ug/L	24
003	1R-45187	Aqueous	Dissolved Iron	6020A	49		ug/L	30
004	1R-45188	Aqueous	Nitrate-Nitrite - N	353.2	0.050		mg/L	32
004	1R-45188	Aqueous	Sulfate	300.0	6.9		mg/L	32
004	1R-45188	Aqueous	Dissolved Barium	6020A	31		ug/L	39
004	1R-45188	Aqueous	Dissolved Cadmium	6020A	0.13		ug/L	39
004	1R-45188	Aqueous	Dissolved Copper	6020A	1.4		ug/L	39
004	1R-45188	Aqueous	Dissolved Iron	6020A	230		ug/L	39
004	1R-45188	Aqueous	Dissolved Zinc	6020A	16		ug/L	39

(22 detections)

Inorganic non-metals

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-001**

Description: **1R-45185** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1125**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	12/20/2013 0748	SMH		37056
1		(COD) SM 5220D-2011	1	01/02/2014 1301	RLF	01/01/2014 1941	
1	9012B	(Cyanide - To) 9012B	1	12/24/2013 1241	KMB	12/20/2013 1140	36843
1		(Nitrate-Nitr) 353.2	1	12/27/2013 2023	HBB		37344
1		(Sulfate) 300.0	1	12/20/2013 0748	SMH		37057

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Chloride		300.0	ND		1.0	mg/L	1
COD		SM 5220D-20	ND		10	mg/L	1
Cyanide - Total	57-12-5	9012B	ND		0.010	mg/L	1
Nitrate-Nitrite - N		**353.2**	**0.076**		**0.020**	**mg/L**	**1**
Sulfate		**300.0**	**7.8**		**1.0**	**mg/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-001**

Description: **1R-45185** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1125**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1525	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		10	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-001**

Description: **1R-45185** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1125**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1525	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		85	70-130
1,2-Dichloroethane-d4		76	70-130
Toluene-d8		80	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aliphatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-001**

Description: **1R-45185** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1125**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0443	PMS	12/24/2013 1724	37140

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C19 - C36 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1
C9 - C18 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1-Chloro-octadecane (aliphatic) - Unfractionated		48	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aromatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-001**

Description: **1R-45185** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1125**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0443	PMS	12/24/2013 1724	37141

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C11 - C22 Aromatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl (aromatic) - Unfractionated		65	40-140
2-Fluorobiphenyl (fractionation 1)		96	40-140
2-Bromonaphthalene (fractionation 2)		92	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aliphatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-001**
Description: **1R-45185**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1125**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/19/2013 2300	AAC		37028

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C5 - C8 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1
C9 - C12 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (FID)		92	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aromatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-001**
Description: **1R-45185**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1125**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/19/2013 2300	AAC		37029

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C9 - C10 Aromatics		MADEP-VPH-0	ND		25	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (PID)		93	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-001**
Description: **1R-45185**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1125**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	12/20/2013 0518	BNW	12/19/2013 1915	36783

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Antimony	7440-36-0	6020A	ND		1.0	ug/L	1
Dissolved Arsenic	7440-38-2	6020A	ND		1.0	ug/L	1
Dissolved Barium	**7440-39-3**	**6020A**	**100**		**5.0**	**ug/L**	**1**
Dissolved Beryllium	7440-41-7	6020A	ND		0.40	ug/L	1
Dissolved Cadmium	7440-43-9	6020A	ND		0.10	ug/L	1
Dissolved Chromium	7440-47-3	6020A	ND		5.0	ug/L	1
Dissolved Cobalt	7440-48-4	6020A	ND		5.0	ug/L	1
Dissolved Copper	**7440-50-8**	**6020A**	**2.9**		**1.0**	**ug/L**	**1**
Dissolved Iron	**7439-89-6**	**6020A**	**260**		**20**	**ug/L**	**1**
Dissolved Lead	7439-92-1	6020A	ND		1.0	ug/L	1
Dissolved Nickel	7440-02-0	6020A	ND		5.0	ug/L	1
Dissolved Selenium	7782-49-2	6020A	ND		1.0	ug/L	1
Dissolved Silver	7440-22-4	6020A	ND		1.0	ug/L	1
Dissolved Thallium	7440-28-0	6020A	ND		0.50	ug/L	1
Dissolved Vanadium	7440-62-2	6020A	ND		5.0	ug/L	1
Dissolved Zinc	**7440-66-6**	**6020A**	**49**		**10**	**ug/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

CVAA

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-001**
Description: **1R-45185**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1125**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	12/30/2013 1821	COH	12/30/2013 1347	37418

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Mercury	7439-97-6	7470A	ND		0.00010	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-002**

Description: **1R-45186** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1135**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	12/20/2013 0812	SMH		37056
1		(COD) SM 5220D-2011	1	01/02/2014 1301	RLF	01/01/2014 1941	
1	9012B	(Cyanide - To) 9012B	1	12/24/2013 1244	KMB	12/20/2013 1140	36843
1		(Nitrate-Nitr) 353.2	1	12/27/2013 2024	HBB		37344
1		(Sulfate) 300.0	1	12/20/2013 0812	SMH		37057

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Chloride		300.0	ND		1.0	mg/L	1
COD		SM 5220D-20	ND		10	mg/L	1
Cyanide - Total	57-12-5	9012B	ND		0.010	mg/L	1
Nitrate-Nitrite - N		**353.2**	**0.077**		**0.020**	**mg/L**	**1**
Sulfate		**300.0**	**7.9**		**1.0**	**mg/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-002**

Description: **1R-45186** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1135**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1547	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		10	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-002**

Description: **1R-45186** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1135**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1547	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		82	70-130
1,2-Dichloroethane-d4	N	68	70-130
Toluene-d8		84	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aliphatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-002**
Description: **1R-45186**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1135**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0517	PMS	12/24/2013 1724	37140

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C19 - C36 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1
C9 - C18 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1-Chloro-octadecane (aliphatic) - Unfractionated		69	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aromatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-002**

Description: **1R-45186** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1135**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0517	PMS	12/24/2013 1724	37141

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C11 - C22 Aromatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl (aromatic) - Unfractionated		71	40-140
2-Fluorobiphenyl (fractionation 1)		102	40-140
2-Bromonaphthalene (fractionation 2)		99	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aliphatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-002**
Description: **1R-45186**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1135**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	VPH	MADEP-VPH-04-1.1	1	12/30/2013 1752	AAC		37473

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C5 - C8 Aliphatics		MADEP-VPH-0	ND		75	ug/L	2
C9 - C12 Aliphatics		MADEP-VPH-0	ND		75	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
2,5-Dibromotoluene (FID)	N	27	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aromatics)

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-002**

Description: **1R-45186** Matrix: **Aqueous**

Date Sampled: **12/17/2013 1135**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/19/2013 2339	AAC		37029

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C9 - C10 Aromatics		MADEP-VPH-0	ND		25	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (PID)	N	65	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
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ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-002**
Description: **1R-45186**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1135**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	12/20/2013 0534	BNW	12/19/2013 1915	36783

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Antimony	7440-36-0	6020A	ND		1.0	ug/L	1
Dissolved Arsenic	7440-38-2	6020A	ND		1.0	ug/L	1
Dissolved Barium	**7440-39-3**	**6020A**	**98**		**5.0**	**ug/L**	**1**
Dissolved Beryllium	7440-41-7	6020A	ND		0.40	ug/L	1
Dissolved Cadmium	7440-43-9	6020A	ND		0.10	ug/L	1
Dissolved Chromium	7440-47-3	6020A	ND		5.0	ug/L	1
Dissolved Cobalt	7440-48-4	6020A	ND		5.0	ug/L	1
Dissolved Copper	**7440-50-8**	**6020A**	**2.9**		**1.0**	**ug/L**	**1**
Dissolved Iron	**7439-89-6**	**6020A**	**320**		**20**	**ug/L**	**1**
Dissolved Lead	7439-92-1	6020A	ND		1.0	ug/L	1
Dissolved Nickel	7440-02-0	6020A	ND		5.0	ug/L	1
Dissolved Selenium	7782-49-2	6020A	ND		1.0	ug/L	1
Dissolved Silver	7440-22-4	6020A	ND		1.0	ug/L	1
Dissolved Thallium	7440-28-0	6020A	ND		0.50	ug/L	1
Dissolved Vanadium	7440-62-2	6020A	ND		5.0	ug/L	1
Dissolved Zinc	**7440-66-6**	**6020A**	**47**		**10**	**ug/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
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ND = Not detected at or above the PQL
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Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

CVAA

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-002**
Description: **1R-45186**
Matrix: **Aqueous**
Date Sampled: **12/17/2013 1135**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	12/30/2013 1829	COH	12/30/2013 1347	37418

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Mercury	7439-97-6	7470A	ND		0.00010	mg/L	1

PQL = Practical quantitation limit
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H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	12/27/2013 0644	SMH		37303
1		(COD) SM 5220D-2011	1	01/02/2014 1301	RLF	01/01/2014 1941	
1	9012B	(Cyanide - To) 9012B	1	12/24/2013 1245	KMB	12/20/2013 1140	36843
1		(Nitrate-Nitr) 353.2	1	12/31/2013 1548	KMB		37554
1		(Sulfate) 300.0	1	12/27/2013 0644	SMH		37301

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Chloride		300.0	ND		1.0	mg/L	1
COD		SM 5220D-20	ND		10	mg/L	1
Cyanide - Total	57-12-5	9012B	ND		0.010	mg/L	1
Nitrate-Nitrite - N		**353.2**	**0.053**		**0.020**	**mg/L**	**1**
Sulfate		300.0	ND		1.0	mg/L	1

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J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-003**

Description: **1R-45187** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0915**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1610	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	**67-64-1**	**8260B**	**22**		**10**	**ug/L**	**1**
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

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P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-003**

Description: **1R-45187** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0915**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1610	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		78	70-130
Toluene-d8		93	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aliphatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	01/04/2014 0642	PMS	12/24/2013 0937	37693

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C9 - C18 Aliphatics		MADEP-EPH-0	ND		100	ug/L	1
C19 - C36 Aliphatics		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1-Chloro-octadecane (aliphatic)		72	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aromatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	01/04/2014 1112	PMS	12/24/2013 1724	37695

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C11 - C22 Aromatics		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl (aromatic)		60	40-140
2-Fluorobiphenyl (fractionation 1)		77	40-140
2-Bromonaphthalene (fractionation 2)		76	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
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ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aliphatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/20/2013 0018	AAC		37028

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C5 - C8 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1
C9 - C12 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (FID)		114	70-130

PQL = Practical quantitation limit
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P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aromatics)

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-003**

Description: **1R-45187** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0915**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/20/2013 0018	AAC		37029

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C9 - C10 Aromatics		MADEP-VPH-0	ND		25	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (PID)		115	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
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N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	12/20/2013 0539	BNW	12/19/2013 1915	36783

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Antimony	7440-36-0	6020A	ND		1.0	ug/L	1
Dissolved Arsenic	7440-38-2	6020A	ND		1.0	ug/L	1
Dissolved Barium	7440-39-3	6020A	ND		5.0	ug/L	1
Dissolved Beryllium	7440-41-7	6020A	ND		0.40	ug/L	1
Dissolved Cadmium	7440-43-9	6020A	ND		0.10	ug/L	1
Dissolved Chromium	7440-47-3	6020A	ND		5.0	ug/L	1
Dissolved Cobalt	7440-48-4	6020A	ND		5.0	ug/L	1
Dissolved Copper	7440-50-8	6020A	ND		1.0	ug/L	1
Dissolved Iron	**7439-89-6**	**6020A**	**49**		**20**	**ug/L**	**1**
Dissolved Lead	7439-92-1	6020A	ND		1.0	ug/L	1
Dissolved Nickel	7440-02-0	6020A	ND		5.0	ug/L	1
Dissolved Selenium	7782-49-2	6020A	ND		1.0	ug/L	1
Dissolved Silver	7440-22-4	6020A	ND		1.0	ug/L	1
Dissolved Thallium	7440-28-0	6020A	ND		0.50	ug/L	1
Dissolved Vanadium	7440-62-2	6020A	ND		5.0	ug/L	1
Dissolved Zinc	7440-66-6	6020A	ND		10	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

CVAA

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-003**
Description: **1R-45187**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0915**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	12/30/2013 1832	COH	12/30/2013 1347	37418

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Mercury	7439-97-6	7470A	ND		0.00010	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Inorganic non-metals

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	12/27/2013 0732	SMH		37303
1		(COD) SM 5220D-2011	1	01/02/2014 1301	RLF	01/01/2014 1941	
1	9012B	(Cyanide - To) 9012B	1	12/24/2013 1246	KMB	12/20/2013 1140	36843
1		(Nitrate-Nitr) 353.2	1	12/31/2013 1549	KMB		37554
1		(Sulfate) 300.0	1	12/27/2013 0732	SMH		37301

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Chloride		300.0	ND		1.0	mg/L	1
COD		SM 5220D-20	ND		10	mg/L	1
Cyanide - Total	57-12-5	9012B	ND		0.010	mg/L	1
Nitrate-Nitrite - N		**353.2**	**0.050**		**0.020**	**mg/L**	**1**
Sulfate		**300.0**	**6.9**		**1.0**	**mg/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-004**

Description: **1R-45188** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0955**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1633	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		10	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-004**

Description: **1R-45188** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0955**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1633	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aliphatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0623	PMS	12/24/2013 1724	37140

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C19 - C36 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1
C9 - C18 Aliphatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1-Chloro-octadecane (aliphatic) - Unfractionated		50	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP EPH (aromatics) - Unfractionated

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-004**

Description: **1R-45188** Matrix: **Aqueous**

Date Sampled: **12/18/2013 0955**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	MADEP-EPH-	MADEP-EPH-04	1	12/31/2013 0623	PMS	12/24/2013 1724	37141

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C11 - C22 Aromatics - Unfractionated		MADEP-EPH-0	ND		100	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl (aromatic) - Unfractionated		72	40-140
2-Fluorobiphenyl (fractionation 1)		96	40-140
2-Bromonaphthalene (fractionation 2)		91	40-140

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aliphatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/20/2013 0056	AAC		37028

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C5 - C8 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1
C9 - C12 Aliphatics		MADEP-VPH-0	ND		75	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (FID)	N	148	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

MADEP VPH (aromatics)

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	VPH	MADEP-VPH-04-1.1	1	12/20/2013 0056	AAC		37029

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
C9 - C10 Aromatics		MADEP-VPH-0	ND		25	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2,5-Dibromotoluene (PID)		120	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

ICP-MS

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020A	1	12/20/2013 0544	BNW	12/19/2013 1915	36783

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Antimony	7440-36-0	6020A	ND		1.0	ug/L	1
Dissolved Arsenic	7440-38-2	6020A	ND		1.0	ug/L	1
Dissolved Barium	**7440-39-3**	**6020A**	**31**		**5.0**	**ug/L**	**1**
Dissolved Beryllium	7440-41-7	6020A	ND		0.40	ug/L	1
Dissolved Cadmium	**7440-43-9**	**6020A**	**0.13**		**0.10**	**ug/L**	**1**
Dissolved Chromium	7440-47-3	6020A	ND		5.0	ug/L	1
Dissolved Cobalt	7440-48-4	6020A	ND		5.0	ug/L	1
Dissolved Copper	**7440-50-8**	**6020A**	**1.4**		**1.0**	**ug/L**	**1**
Dissolved Iron	**7439-89-6**	**6020A**	**230**		**20**	**ug/L**	**1**
Dissolved Lead	7439-92-1	6020A	ND		1.0	ug/L	1
Dissolved Nickel	7440-02-0	6020A	ND		5.0	ug/L	1
Dissolved Selenium	7782-49-2	6020A	ND		1.0	ug/L	1
Dissolved Silver	7440-22-4	6020A	ND		1.0	ug/L	1
Dissolved Thallium	7440-28-0	6020A	ND		0.50	ug/L	1
Dissolved Vanadium	7440-62-2	6020A	ND		5.0	ug/L	1
Dissolved Zinc	**7440-66-6**	**6020A**	**16**		**10**	**ug/L**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

CVAA

Client: **CDM Federal Programs (CDM Smith)**
Laboratory ID: **OL19041-004**
Description: **1R-45188**
Matrix: **Aqueous**
Date Sampled: **12/18/2013 0955**
Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	12/30/2013 1834	COH	12/30/2013 1347	37418

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Mercury	7439-97-6	7470A	ND		0.00010	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-005**

Description: **TB-1** Matrix: **Aqueous**

Date Sampled: **12/17/2013**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1310	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		10	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-005**

Description: **TB-1** Matrix: **Aqueous**

Date Sampled: **12/17/2013**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1310	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-006**

Description: **TB-4** Matrix: **Aqueous**

Date Sampled: **12/18/2013**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1332	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acetone	67-64-1	8260B	ND		10	ug/L	1
Acrylonitrile	107-13-1	8260B	ND		5.0	ug/L	1
Benzene	71-43-2	8260B	ND		0.50	ug/L	1
Bromochloromethane	74-97-5	8260B	ND		0.50	ug/L	1
Bromodichloromethane	75-27-4	8260B	ND		0.50	ug/L	1
Bromoform	75-25-2	8260B	ND		0.50	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		0.50	ug/L	1
2-Butanone (MEK)	78-93-3	8260B	ND		10	ug/L	1
Carbon disulfide	75-15-0	8260B	ND		0.50	ug/L	1
Carbon tetrachloride	56-23-5	8260B	ND		0.50	ug/L	1
Chlorobenzene	108-90-7	8260B	ND		0.50	ug/L	1
Chloroethane	75-00-3	8260B	ND		0.50	ug/L	1
Chloroform	67-66-3	8260B	ND		0.50	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		0.50	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		0.50	ug/L	1
Dibromochloromethane	124-48-1	8260B	ND		0.50	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		0.50	ug/L	1
Dibromomethane (Methylene bromide)	74-95-3	8260B	ND		0.50	ug/L	1
trans-1,4-Dichloro-2-butene	110-57-6	8260B	ND		2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		0.50	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		0.50	ug/L	1
Dichlorodifluoromethane	75-71-8	8260B	ND		0.50	ug/L	1
1,1-Dichloroethane	75-34-3	8260B	ND		0.50	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		0.50	ug/L	1
1,1-Dichloroethene	75-35-4	8260B	ND		0.50	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		0.50	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		0.50	ug/L	1
1,2-Dichloropropane	78-87-5	8260B	ND		0.50	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		0.50	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		0.50	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		0.50	ug/L	1
2-Hexanone	591-78-6	8260B	ND		10	ug/L	1
Methyl iodide (Iodomethane)	74-88-4	8260B	ND		5.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		10	ug/L	1
Methylene chloride	75-09-2	8260B	ND		0.50	ug/L	1
Styrene	100-42-5	8260B	ND		0.50	ug/L	1
1,1,1,2-Tetrachloroethane	630-20-6	8260B	ND		0.50	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		0.50	ug/L	1
Tetrachloroethene	127-18-4	8260B	ND		0.50	ug/L	1
Toluene	108-88-3	8260B	ND		0.50	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		0.50	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		0.50	ug/L	1
Trichloroethene	79-01-6	8260B	ND		0.50	ug/L	1
Trichlorofluoromethane	75-69-4	8260B	ND		0.50	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Volatile Organic Compounds by GC/MS

Client: **CDM Federal Programs (CDM Smith)** Laboratory ID: **OL19041-006**

Description: **TB-4** Matrix: **Aqueous**

Date Sampled: **12/18/2013**

Date Received: **12/19/2013**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	12/26/2013 1332	JHD		37198

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2,3-Trichloropropane	96-18-4	8260B	ND		0.50	ug/L	1
Vinyl acetate	108-05-4	8260B	ND		1.0	ug/L	1
Vinyl chloride	75-01-4	8260B	ND		0.50	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Inorganic non-metals - MB

Sample ID: OQ36843-001
Batch: 36843
Analytical Method: 9012B
Matrix: Aqueous
Prep Method: 9012B
Prep Date: 12/20/2013 1140

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Cyanide - Total	ND		1	0.010	mg/L	12/24/2013 1228

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ36843-002
Batch: 36843
Analytical Method: 9012B
Matrix: Aqueous
Prep Method: 9012B
Prep Date: 12/20/2013 1140

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Cyanide - Total	0.10	0.096		1	96	90-110	12/24/2013 1229

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ36843-003
Batch: 36843
Analytical Method: 9012B
Matrix: Aqueous
Prep Method: 9012B
Prep Date: 12/20/2013 1140

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Cyanide - Total	0.10	0.096		1	96	0.21	90-110	20	12/24/2013 1230

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MS

Sample ID: OL19041-001MS
Batch: 36843
Analytical Method: 9012B
Matrix: Aqueous
Prep Method: 9012B
Prep Date: 12/20/2013 1140

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Cyanide - Total	ND	0.10	0.10		1	104	70-130	12/24/2013 1242

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: OL19041-001MD
Batch: 36843
Analytical Method: 9012B
Matrix: Aqueous
Prep Method: 9012B
Prep Date: 12/20/2013 1140

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Cyanide - Total	ND	0.10	0.099		1	99	4.6	70-130	20	12/24/2013 1243

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37056-001
Batch: 37056
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Chloride	ND		1	1.0	mg/L	12/19/2013 2033

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37056-002
Batch: 37056
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	101	90-110	12/19/2013 2057

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37056-003
Batch: 37056
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Chloride	20	20		1	101	0.19	90-110	20	12/19/2013 2121

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37057-001
Batch: 37057
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Sulfate	ND		1	1.0	mg/L	12/19/2013 2033

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37057-002
Batch: 37057
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	21		1	103	90-110	12/19/2013 2057

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37057-003
Batch: 37057
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfate	20	21		1	104	0.92	90-110	20	12/19/2013 2121

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37301-001
Batch: 37301
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Sulfate	ND		1	1.0	mg/L	12/27/2013 0018

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37301-002
Batch: 37301
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Sulfate	20	21		1	103	90-110	12/27/2013 0130

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37301-003
Batch: 37301
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Sulfate	20	21		1	104	0.74	90-110	20	12/27/2013 0154

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - Duplicate

Sample ID: OL19041-003DU
Batch: 37301
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Result (mg/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Sulfate	ND	ND		1	0.00	20	12/27/2013 0708

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37303-001
Batch: 37303
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Chloride	ND		1	1.0	mg/L	12/27/2013 0018

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37303-002
Batch: 37303
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Chloride	20	20		1	100	90-110	12/27/2013 0130

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37303-003
Batch: 37303
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Chloride	20	20		1	100	0.27	90-110	20	12/27/2013 0154

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - Duplicate

Sample ID: OL19041-003DU
Batch: 37303
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Result (mg/L)	Q	Dil	% RPD	% RPD Limit	Analysis Date
Chloride	ND	ND		1	0.00	20	12/27/2013 0708

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37344-001
Batch: 37344
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Nitrate-Nitrite - N	ND		1	0.020	mg/L	12/27/2013 2002

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37344-002
Batch: 37344
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.85		1	106	90-110	12/27/2013 2003

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37344-003
Batch: 37344
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.84		1	105	1.2	90-110	20	12/27/2013 2004

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MB

Sample ID: OQ37554-001
Batch: 37554
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Nitrate-Nitrite - N	ND		1	0.020	mg/L	12/31/2013 1527

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCS

Sample ID: OQ37554-002
Batch: 37554
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.83		1	104	90-110	12/31/2013 1529

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - LCSD

Sample ID: OQ37554-003
Batch: 37554
Analytical Method: 353.2
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Nitrate-Nitrite - N	0.80	0.83		1	104	0.12	90-110	20	12/31/2013 1530

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ37198-001
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acetone	ND		1	10	ug/L	12/26/2013 1136
Acrylonitrile	ND		1	5.0	ug/L	12/26/2013 1136
Benzene	ND		1	0.50	ug/L	12/26/2013 1136
Bromochloromethane	ND		1	0.50	ug/L	12/26/2013 1136
Bromodichloromethane	ND		1	0.50	ug/L	12/26/2013 1136
Bromoform	ND		1	0.50	ug/L	12/26/2013 1136
Bromomethane (Methyl bromide)	ND		1	0.50	ug/L	12/26/2013 1136
2-Butanone (MEK)	ND		1	10	ug/L	12/26/2013 1136
Carbon disulfide	ND		1	0.50	ug/L	12/26/2013 1136
Carbon tetrachloride	ND		1	0.50	ug/L	12/26/2013 1136
Chlorobenzene	ND		1	0.50	ug/L	12/26/2013 1136
Chloroethane	ND		1	0.50	ug/L	12/26/2013 1136
Chloroform	ND		1	0.50	ug/L	12/26/2013 1136
Chloromethane (Methyl chloride)	ND		1	0.50	ug/L	12/26/2013 1136
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	ug/L	12/26/2013 1136
Dibromochloromethane	ND		1	0.50	ug/L	12/26/2013 1136
1,2-Dibromoethane (EDB)	ND		1	0.50	ug/L	12/26/2013 1136
Dibromomethane (Methylene bromide)	ND		1	0.50	ug/L	12/26/2013 1136
trans-1,4-Dichloro-2-butene	ND		1	2.0	ug/L	12/26/2013 1136
1,4-Dichlorobenzene	ND		1	0.50	ug/L	12/26/2013 1136
1,2-Dichlorobenzene	ND		1	0.50	ug/L	12/26/2013 1136
Dichlorodifluoromethane	ND		1	0.50	ug/L	12/26/2013 1136
1,1-Dichloroethane	ND		1	0.50	ug/L	12/26/2013 1136
1,2-Dichloroethane	ND		1	0.50	ug/L	12/26/2013 1136
cis-1,2-Dichloroethene	ND		1	0.50	ug/L	12/26/2013 1136
1,1-Dichloroethene	ND		1	0.50	ug/L	12/26/2013 1136
trans-1,2-Dichloroethene	ND		1	0.50	ug/L	12/26/2013 1136
1,2-Dichloropropane	ND		1	0.50	ug/L	12/26/2013 1136
trans-1,3-Dichloropropene	ND		1	0.50	ug/L	12/26/2013 1136
cis-1,3-Dichloropropene	ND		1	0.50	ug/L	12/26/2013 1136
Ethylbenzene	ND		1	0.50	ug/L	12/26/2013 1136
2-Hexanone	ND		1	10	ug/L	12/26/2013 1136
Methyl iodide (Iodomethane)	ND		1	5.0	ug/L	12/26/2013 1136
4-Methyl-2-pentanone	ND		1	10	ug/L	12/26/2013 1136
Methylene chloride	ND		1	0.50	ug/L	12/26/2013 1136
Styrene	ND		1	0.50	ug/L	12/26/2013 1136
1,1,2,2-Tetrachloroethane	ND		1	0.50	ug/L	12/26/2013 1136
1,1,1,2-Tetrachloroethane	ND		1	0.50	ug/L	12/26/2013 1136
Tetrachloroethene	ND		1	0.50	ug/L	12/26/2013 1136
Toluene	ND		1	0.50	ug/L	12/26/2013 1136
1,1,1-Trichloroethane	ND		1	0.50	ug/L	12/26/2013 1136
1,1,2-Trichloroethane	ND		1	0.50	ug/L	12/26/2013 1136
Trichloroethene	ND		1	0.50	ug/L	12/26/2013 1136
Trichlorofluoromethane	ND		1	0.50	ug/L	12/26/2013 1136

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ37198-001
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
1,2,3-Trichloropropane	ND		1	0.50	ug/L	12/26/2013 1136
Vinyl acetate	ND		1	1.0	ug/L	12/26/2013 1136
Vinyl chloride	ND		1	0.50	ug/L	12/26/2013 1136
Xylenes (total)	ND		1	0.50	ug/L	12/26/2013 1136

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ37198-002
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acetone	100	96		1	96	60-140	12/26/2013 1006
Acrylonitrile	100	95		1	95	60-140	12/26/2013 1006
Benzene	50	46		1	91	70-130	12/26/2013 1006
Bromochloromethane	50	48		1	97	70-130	12/26/2013 1006
Bromodichloromethane	50	50		1	99	70-130	12/26/2013 1006
Bromoform	50	52		1	105	70-130	12/26/2013 1006
Bromomethane (Methyl bromide)	50	57		1	114	60-140	12/26/2013 1006
2-Butanone (MEK)	100	91		1	91	60-140	12/26/2013 1006
Carbon disulfide	50	47		1	94	60-140	12/26/2013 1006
Carbon tetrachloride	50	49		1	98	70-130	12/26/2013 1006
Chlorobenzene	50	47		1	94	70-130	12/26/2013 1006
Chloroethane	50	51		1	103	42-163	12/26/2013 1006
Chloroform	50	47		1	95	70-130	12/26/2013 1006
Chloromethane (Methyl chloride)	50	46		1	91	20-158	12/26/2013 1006
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	102	70-130	12/26/2013 1006
Dibromochloromethane	50	51		1	103	70-130	12/26/2013 1006
1,2-Dibromoethane (EDB)	50	47		1	94	70-130	12/26/2013 1006
Dibromomethane (Methylene bromide)	50	48		1	95	70-130	12/26/2013 1006
trans-1,4-Dichloro-2-butene	50	58		1	116	34-142	12/26/2013 1006
1,4-Dichlorobenzene	50	46		1	93	70-130	12/26/2013 1006
1,2-Dichlorobenzene	50	48		1	97	70-130	12/26/2013 1006
Dichlorodifluoromethane	50	54		1	108	60-140	12/26/2013 1006
1,1-Dichloroethane	50	45		1	91	70-130	12/26/2013 1006
1,2-Dichloroethane	50	48		1	95	70-130	12/26/2013 1006
cis-1,2-Dichloroethene	50	45		1	90	70-130	12/26/2013 1006
1,1-Dichloroethene	50	45		1	90	70-130	12/26/2013 1006
trans-1,2-Dichloroethene	50	49		1	98	70-130	12/26/2013 1006
1,2-Dichloropropane	50	45		1	90	70-130	12/26/2013 1006
trans-1,3-Dichloropropene	50	51		1	101	70-130	12/26/2013 1006
cis-1,3-Dichloropropene	50	51		1	101	70-130	12/26/2013 1006
Ethylbenzene	50	47		1	94	70-130	12/26/2013 1006
2-Hexanone	100	79		1	79	60-140	12/26/2013 1006
Methyl iodide (Iodomethane)	50	49		1	97	70-130	12/26/2013 1006
4-Methyl-2-pentanone	100	87		1	87	60-140	12/26/2013 1006
Methylene chloride	50	49		1	99	70-130	12/26/2013 1006
Styrene	50	49		1	97	70-130	12/26/2013 1006
1,1,2,2-Tetrachloroethane	50	45		1	91	70-130	12/26/2013 1006
1,1,1,2-Tetrachloroethane	50	50		1	101	70-130	12/26/2013 1006
Tetrachloroethene	50	46		1	93	70-130	12/26/2013 1006
Toluene	50	45		1	91	70-130	12/26/2013 1006
1,1,1-Trichloroethane	50	48		1	96	70-130	12/26/2013 1006
1,1,2-Trichloroethane	50	44		1	89	70-130	12/26/2013 1006
Trichloroethene	50	48		1	96	70-130	12/26/2013 1006
Trichlorofluoromethane	50	56		1	112	60-140	12/26/2013 1006

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ37198-002
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2,3-Trichloropropane	50	45		1	89	70-130	12/26/2013 1006
Vinyl acetate	50	47		1	93	29-197	12/26/2013 1006
Vinyl chloride	50	56		1	112	60-140	12/26/2013 1006
Xylenes (total)	100	97		1	97	70-130	12/26/2013 1006

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		91	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ37198-003
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acetone	100	100		1	102	6.1	60-140	20	12/26/2013 1029
Acrylonitrile	100	100		1	100	5.0	60-140	40	12/26/2013 1029
Benzene	50	45		1	89	1.9	70-130	20	12/26/2013 1029
Bromochloromethane	50	47		1	95	1.7	70-130	20	12/26/2013 1029
Bromodichloromethane	50	49		1	97	2.0	70-130	20	12/26/2013 1029
Bromoform	50	52		1	105	0.28	70-130	20	12/26/2013 1029
Bromomethane (Methyl bromide)	50	53		1	107	6.7	60-140	20	12/26/2013 1029
2-Butanone (MEK)	100	95		1	95	3.3	60-140	20	12/26/2013 1029
Carbon disulfide	50	44		1	88	6.4	60-140	20	12/26/2013 1029
Carbon tetrachloride	50	47		1	94	4.7	70-130	20	12/26/2013 1029
Chlorobenzene	50	47		1	93	1.0	70-130	20	12/26/2013 1029
Chloroethane	50	49		1	99	3.8	42-163	20	12/26/2013 1029
Chloroform	50	46		1	92	2.6	70-130	20	12/26/2013 1029
Chloromethane (Methyl chloride)	50	41		1	81	12	20-158	20	12/26/2013 1029
1,2-Dibromo-3-chloropropane (DBCP)	50	51		1	103	0.73	70-130	20	12/26/2013 1029
Dibromochloromethane	50	50		1	101	2.3	70-130	20	12/26/2013 1029
1,2-Dibromoethane (EDB)	50	48		1	96	2.2	70-130	20	12/26/2013 1029
Dibromomethane (Methylene bromide)	50	48		1	96	0.37	70-130	20	12/26/2013 1029
trans-1,4-Dichloro-2-butene	50	57		1	114	2.3	34-142	20	12/26/2013 1029
1,4-Dichlorobenzene	50	46		1	91	1.4	70-130	20	12/26/2013 1029
1,2-Dichlorobenzene	50	48		1	96	1.1	70-130	20	12/26/2013 1029
Dichlorodifluoromethane	50	51		1	101	6.8	60-140	20	12/26/2013 1029
1,1-Dichloroethane	50	44		1	88	3.7	70-130	20	12/26/2013 1029
1,2-Dichloroethane	50	47		1	95	0.56	70-130	20	12/26/2013 1029
cis-1,2-Dichloroethene	50	45		1	90	0.46	70-130	20	12/26/2013 1029
1,1-Dichloroethene	50	44		1	87	3.7	70-130	20	12/26/2013 1029
trans-1,2-Dichloroethene	50	47		1	94	3.8	70-130	20	12/26/2013 1029
1,2-Dichloropropane	50	45		1	89	0.56	70-130	20	12/26/2013 1029
trans-1,3-Dichloropropene	50	51		1	101	0.0099	70-130	20	12/26/2013 1029
cis-1,3-Dichloropropene	50	50		1	101	0.37	70-130	20	12/26/2013 1029
Ethylbenzene	50	46		1	92	2.4	70-130	20	12/26/2013 1029
2-Hexanone	100	86		1	86	7.9	60-140	20	12/26/2013 1029
Methyl iodide (Iodomethane)	50	46		1	92	5.6	70-130	20	12/26/2013 1029
4-Methyl-2-pentanone	100	91		1	91	4.8	60-140	20	12/26/2013 1029
Methylene chloride	50	48		1	96	3.3	70-130	20	12/26/2013 1029
Styrene	50	48		1	96	1.3	70-130	20	12/26/2013 1029
1,1,2,2-Tetrachloroethane	50	47		1	93	2.4	70-130	20	12/26/2013 1029
1,1,1,2-Tetrachloroethane	50	49		1	98	3.1	70-130	20	12/26/2013 1029
Tetrachloroethene	50	46		1	92	0.36	70-130	20	12/26/2013 1029
Toluene	50	45		1	89	1.6	70-130	20	12/26/2013 1029
1,1,1-Trichloroethane	50	46		1	91	4.7	70-130	20	12/26/2013 1029
1,1,2-Trichloroethane	50	45		1	91	1.8	70-130	20	12/26/2013 1029
Trichloroethene	50	46		1	92	3.7	70-130	20	12/26/2013 1029
Trichlorofluoromethane	50	51		1	101	10	60-140	20	12/26/2013 1029

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ37198-003
Batch: 37198
Analytical Method: 8260B
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
1,2,3-Trichloropropane	50	46		1	92	2.8	70-130	20	12/26/2013 1029
Vinyl acetate	50	49		1	97	4.3	29-197	20	12/26/2013 1029
Vinyl chloride	50	51		1	101	9.9	60-140	20	12/26/2013 1029
Xylenes (total)	100	95		1	95	1.8	70-130	20	12/26/2013 1029

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		92	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - Unfractionated - MB

Sample ID: OQ37140-001
Batch: 37140
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C19 - C36 Aliphatics - Unfractionated	ND		1	100	ug/L	12/31/2013 0303
C9 - C18 Aliphatics - Unfractionated	ND		1	100	ug/L	12/31/2013 0303

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic) - Unfractionated		66	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - Unfractionated - LCS

Sample ID: OQ37140-002
Batch: 37140
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C19 - C36 Aliphatics - Unfractionated	900	800		1	89	40-140	12/31/2013 0337
C9 - C18 Aliphatics - Unfractionated	650	390		1	61	40-140	12/31/2013 0337

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic) - Unfractionated		64	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - Unfractionated - LCSD

Sample ID: OQ37140-003
Batch: 37140
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C19 - C36 Aliphatics - Unfractionated	900	740		1	83	7.2	40-140	25	12/31/2013 0410
C9 - C18 Aliphatics - Unfractionated	650	370		1	56	7.3	40-140	25	12/31/2013 0410

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic) - Unfractionated		64	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - Unfractionated - MB

Sample ID: OQ37141-001
Batch: 37141
Analytical Method: MADEP-EPH-04
Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C11 - C22 Aromatics - Unfractionated	ND		1	100	ug/L	12/31/2013 0303

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		95	40-140
2-Fluorobiphenyl (fractionation 1)		96	40-140
o - Terphenyl (aromatic) - Unfractionated		74	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - Unfractionated - LCS

Sample ID: OQ37141-002
Batch: 37141
Analytical Method: MADEP-EPH-04
Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C11 - C22 Aromatics - Unfractionated	1400	980		1	70	40-140	12/31/2013 0337

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		98	40-140
2-Fluorobiphenyl (fractionation 1)		102	40-140
o - Terphenyl (aromatic) - Unfractionated		73	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - Unfractionated - LCSD

Sample ID: OQ37141-003
Batch: 37141
Analytical Method: MADEP-EPH-04
Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C11 - C22 Aromatics - Unfractionated	1400	920		1	65	7.0	40-140	25	12/31/2013 0410

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		90	40-140
2-Fluorobiphenyl (fractionation 1)		94	40-140
o - Terphenyl (aromatic) - Unfractionated		67	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - MB

Sample ID: PQ37693-001
Batch: 37693
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 937

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C19 - C36 Aliphatics	ND		1	100	ug/L	01/04/2014 0512
C9 - C18 Aliphatics	ND		1	100	ug/L	01/04/2014 0512

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic)		54	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - LCS

Sample ID: PQ37693-002
Batch: 37693
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 937

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C19 - C36 Aliphatics	400	310		1	77	40-140	01/04/2014 0542
C9 - C18 Aliphatics	300	150		1	49	40-140	01/04/2014 0542

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic)		53	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aliphatics) - LCSD

Sample ID: PQ37693-003
Batch: 37693
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 937

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C19 - C36 Aliphatics	400	310		1	79	2.0	40-140	25	01/04/2014 0612
C9 - C18 Aliphatics	300	150		1	49	0.47	40-140	25	01/04/2014 0612

Surrogate	Q	% Rec	Acceptance Limit
1-Chloro-octadecane (aliphatic)		59	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - MB

Sample ID: PQ37695-001
Batch: 37695
Analytical Method: MADEP-EPH-04
Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C11 - C22 Aromatics	ND		1	100	ug/L	01/04/2014 0942

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		75	40-140
2-Fluorobiphenyl (fractionation 1)		75	40-140
o - Terphenyl (aromatic)		58	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - LCS

Sample ID: PQ37695-002
Batch: 37695
Analytical Method: MADEP-EPH-04
Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C11 - C22 Aromatics	850	490		1	57	40-140	01/04/2014 1012

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		77	40-140
2-Fluorobiphenyl (fractionation 1)		78	40-140
o - Terphenyl (aromatic)		56	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP EPH (aromatics) - LCSD

Sample ID: PQ37695-003
Batch: 37695
Analytical Method: MADEP-EPH-04

Matrix: Aqueous
Prep Method: MADEP-EPH-04
Prep Date: 12/24/2013 1724

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C11 - C22 Aromatics	850	490		1	57	0.22	40-140	25	01/04/2014 1042

Surrogate	Q	% Rec	Acceptance Limit
2-Bromonaphthalene (fractionation 2)		76	40-140
2-Fluorobiphenyl (fractionation 1)		77	40-140
o - Terphenyl (aromatic)		55	40-140

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - MB

Sample ID: OQ37028-001
Batch: 37028
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C5 - C8 Aliphatics	ND		1	75	ug/L	12/19/2013 2150
C9 - C12 Aliphatics	ND		1	75	ug/L	12/19/2013 2150

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		119	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - LCS

Sample ID: OQ37028-002
Batch: 37028
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C5 - C8 Aliphatics	75	78		1	104	70-130	12/19/2013 2032
C9 - C12 Aliphatics	75	72		1	96	70-130	12/19/2013 2032

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		104	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - LCSD

Sample ID: OQ37028-003
Batch: 37028
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C5 - C8 Aliphatics	75	78		1	103	0.51	70-130	25	12/19/2013 2111
C9 - C12 Aliphatics	75	73		1	98	1.4	70-130	25	12/19/2013 2111

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		109	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - MS

Sample ID: OL19041-004MS
Batch: 37028
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C5 - C8 Aliphatics	ND	75	160	N	1	211	70-130	12/20/2013 0410
C9 - C12 Aliphatics	ND	75	270	N	1	359	70-130	12/20/2013 0410

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)	N	218	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - MSD

Sample ID: OL19041-004MD
Batch: 37028
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C5 - C8 Aliphatics	ND	75	160	N	1	209	0.63	70-130	25	12/20/2013 0448
C9 - C12 Aliphatics	ND	75	260	N	1	352	1.9	70-130	25	12/20/2013 0448

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)	N	218	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aromatics) - MB

Sample ID: OQ37029-001
Batch: 37029
Analytical Method: MADEP-VPH-04-1.1
Matrix: Aqueous
Prep Method: VPH

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C9 - C10 Aromatics	ND		1	25	ug/L	12/19/2013 2150

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (PID)		120	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aromatics) - LCS

Sample ID: OQ37029-002
Batch: 37029
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C9 - C10 Aromatics	25	23		1	92	70-130	12/19/2013 2032

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (PID)		106	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aromatics) - LCSD

Sample ID: OQ37029-003
Batch: 37029
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C9 - C10 Aromatics	25	23		1	94	1.7	70-130	25	12/19/2013 2111

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (PID)		109	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aromatics) - MS

Sample ID: OL19041-004MS
Batch: 37029
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C9 - C10 Aromatics	ND	25	30		1	121	70-130	12/20/2013 0410

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (PID)	N	221	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aromatics) - MSD

Sample ID: OL19041-004MD
Batch: 37029
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C9 - C10 Aromatics	ND	25	29		1	117	3.4	70-130	25	12/20/2013 0448

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (PID)	N	221	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - MB

Sample ID: OQ37473-001
Batch: 37473
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
C5 - C8 Aliphatics	ND		1	75	ug/L	12/30/2013 1713
C9 - C12 Aliphatics	ND		1	75	ug/L	12/30/2013 1713

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		102	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - LCS

Sample ID: OQ37473-002
Batch: 37473
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
C5 - C8 Aliphatics	75	73		1	97	70-130	12/30/2013 1518
C9 - C12 Aliphatics	75	76		1	101	70-130	12/30/2013 1518

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		72	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

MADEP VPH (aliphatics) - LCSD

Sample ID: OQ37473-003
Batch: 37473
Analytical Method: MADEP-VPH-04-1.1

Matrix: Aqueous
Prep Method: VPH

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
C5 - C8 Aliphatics	75	72		1	96	1.8	70-130	25	12/30/2013 1556
C9 - C12 Aliphatics	75	72		1	95	5.7	70-130	25	12/30/2013 1556

Surrogate	Q	% Rec	Acceptance Limit
2,5-Dibromotoluene (FID)		83	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MB

Sample ID: OQ36783-001
Batch: 36783
Analytical Method: 6020A
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 12/19/2013 1915

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Dissolved Antimony	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Arsenic	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Barium	ND		1	5.0	ug/L	12/20/2013 0326
Dissolved Beryllium	ND		1	0.40	ug/L	12/20/2013 0326
Dissolved Cadmium	ND		1	0.10	ug/L	12/20/2013 0326
Dissolved Chromium	ND		1	5.0	ug/L	12/20/2013 0326
Dissolved Cobalt	ND		1	5.0	ug/L	12/20/2013 0326
Dissolved Copper	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Iron	ND		1	20	ug/L	12/20/2013 1913
Dissolved Lead	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Nickel	ND		1	5.0	ug/L	12/20/2013 0326
Dissolved Selenium	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Silver	ND		1	1.0	ug/L	12/20/2013 0326
Dissolved Thallium	ND		1	0.50	ug/L	12/20/2013 0326
Dissolved Vanadium	ND		1	5.0	ug/L	12/20/2013 0326
Dissolved Zinc	ND		1	10	ug/L	12/20/2013 0326

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: OQ36783-002
Batch: 36783
Analytical Method: 6020A
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 12/19/2013 1915

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Antimony	100	100		1	101	80-120	12/20/2013 0331
Dissolved Arsenic	100	99		1	99	80-120	12/20/2013 0331
Dissolved Barium	100	110		1	106	80-120	12/20/2013 0331
Dissolved Beryllium	100	100		1	103	80-120	12/20/2013 0331
Dissolved Cadmium	100	100		1	101	80-120	12/20/2013 0331
Dissolved Chromium	100	99		1	99	80-120	12/20/2013 0331
Dissolved Cobalt	100	100		1	101	80-120	12/20/2013 0331
Dissolved Copper	100	100		1	101	80-120	12/20/2013 0331
Dissolved Iron	1000	1000		1	102	80-120	12/20/2013 1918
Dissolved Lead	100	99		1	99	80-120	12/20/2013 0331
Dissolved Nickel	100	99		1	99	80-120	12/20/2013 0331
Dissolved Selenium	100	99		1	99	80-120	12/20/2013 0331
Dissolved Silver	100	97		1	97	80-120	12/20/2013 0331
Dissolved Thallium	100	100		1	101	80-120	12/20/2013 0331
Dissolved Vanadium	100	98		1	98	80-120	12/20/2013 0331
Dissolved Zinc	100	100		1	103	80-120	12/20/2013 0331

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCSD

Sample ID: OQ36783-003
Batch: 36783
Analytical Method: 6020A
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 12/19/2013 1915

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Antimony	100	100		1	100	0.89	80-120	20	12/20/2013 0337
Dissolved Arsenic	100	96		1	96	3.2	80-120	20	12/20/2013 0337
Dissolved Barium	100	100		1	103	2.1	80-120	20	12/20/2013 0337
Dissolved Beryllium	100	100		1	102	0.98	80-120	20	12/20/2013 0337
Dissolved Cadmium	100	100		1	101	0.69	80-120	20	12/20/2013 0337
Dissolved Chromium	100	99		1	99	0.14	80-120	20	12/20/2013 0337
Dissolved Cobalt	100	100		1	102	1.8	80-120	20	12/20/2013 0337
Dissolved Copper	100	100		1	100	0.88	80-120	20	12/20/2013 0337
Dissolved Iron	1000	1200		1	118	14	80-120	20	12/20/2013 1924
Dissolved Lead	100	99		1	99	0.86	80-120	20	12/20/2013 0337
Dissolved Nickel	100	100		1	101	2.1	80-120	20	12/20/2013 0337
Dissolved Selenium	100	97		1	97	2.9	80-120	20	12/20/2013 0337
Dissolved Silver	100	95		1	95	1.1	80-120	20	12/20/2013 0337
Dissolved Thallium	100	100		1	100	0.60	80-120	20	12/20/2013 0337
Dissolved Vanadium	100	98		1	98	0.44	80-120	20	12/20/2013 0337
Dissolved Zinc	100	100		1	104	0.48	80-120	20	12/20/2013 0337

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: OL19041-004MS
Batch: 36783
Analytical Method: 6020A
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 12/19/2013 1915

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Antimony	ND	100	100		1	102	70-130	12/20/2013 0550
Dissolved Arsenic	ND	100	98		1	98	70-130	12/20/2013 0550
Dissolved Barium	31	100	130		1	102	70-130	12/20/2013 0550
Dissolved Beryllium	ND	100	100		1	101	70-130	12/20/2013 0550
Dissolved Cadmium	0.13	100	100		1	101	70-130	12/20/2013 0550
Dissolved Chromium	ND	100	99		1	99	70-130	12/20/2013 0550
Dissolved Cobalt	ND	100	100		1	103	70-130	12/20/2013 0550
Dissolved Copper	1.4	100	98		1	98	70-130	12/20/2013 0550
Dissolved Iron	230	1000	1100		1	88	70-130	12/20/2013 0550
Dissolved Lead	ND	100	100		1	101	70-130	12/20/2013 0550
Dissolved Nickel	ND	100	100		1	100	70-130	12/20/2013 0550
Dissolved Selenium	ND	100	96		1	96	70-130	12/20/2013 0550
Dissolved Silver	ND	100	94		1	94	70-130	12/20/2013 0550
Dissolved Thallium	ND	100	100		1	102	70-130	12/20/2013 0550
Dissolved Vanadium	ND	100	100		1	100	70-130	12/20/2013 0550
Dissolved Zinc	16	100	120		1	117	70-130	12/20/2013 0550

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: OL19041-004MD
Batch: 36783
Analytical Method: 6020A
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 12/19/2013 1915

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Antimony	ND	100	100		1	103	0.68	70-130	20	12/20/2013 0555
Dissolved Arsenic	ND	100	100		1	100	1.9	70-130	20	12/20/2013 0555
Dissolved Barium	31	100	140		1	105	1.8	70-130	20	12/20/2013 0555
Dissolved Beryllium	ND	100	100		1	102	1.7	70-130	20	12/20/2013 0555
Dissolved Cadmium	0.13	100	100		1	102	0.69	70-130	20	12/20/2013 0555
Dissolved Chromium	ND	100	100		1	100	0.86	70-130	20	12/20/2013 0555
Dissolved Cobalt	ND	100	110		1	106	3.4	70-130	20	12/20/2013 0555
Dissolved Copper	1.4	100	99		1	99	0.35	70-130	20	12/20/2013 0555
Dissolved Iron	230	1000	1200		1	93	4.3	70-130	20	12/20/2013 0555
Dissolved Lead	ND	100	100		1	104	2.3	70-130	20	12/20/2013 0555
Dissolved Nickel	ND	100	100		1	103	2.7	70-130	20	12/20/2013 0555
Dissolved Selenium	ND	100	96		1	96	0.78	70-130	20	12/20/2013 0555
Dissolved Silver	ND	100	95		1	95	1.3	70-130	20	12/20/2013 0555
Dissolved Thallium	ND	100	100		1	105	2.4	70-130	20	12/20/2013 0555
Dissolved Vanadium	ND	100	100		1	101	0.99	70-130	20	12/20/2013 0555
Dissolved Zinc	16	100	120		1	117	0.17	70-130	20	12/20/2013 0555

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

CVAA - MB

Sample ID: OQ37418-001
Batch: 37418
Analytical Method: 7470A
Matrix: Aqueous
Prep Method: 7470A
Prep Date: 12/30/2013 1347

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Dissolved Mercury	ND		1	0.00010	mg/L	12/30/2013 1813

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

CVAA - LCS

Sample ID: OQ37418-002
Batch: 37418
Analytical Method: 7470A
Matrix: Aqueous
Prep Method: 7470A
Prep Date: 12/30/2013 1347

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Mercury	0.0020	0.0021		1	104	85-115	12/30/2013 1816

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

CVAA - LCSD

Sample ID: OQ37418-003
Batch: 37418
Analytical Method: 7470A
Matrix: Aqueous
Prep Method: 7470A
Prep Date: 12/30/2013 1347

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Mercury	0.0020	0.0021		1	103	1.4	85-115	20	12/30/2013 1818

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, South Carolina 29172
Telephone No. (803) 791-9700 Fax No. (803) 791-9111
www.shealylab.com

Chain of Custody Record

Number 06553

Client: CDM Smith	Report to Contact: Tracy Dodge	Sampler (Printed Name): Kris Beaudoin	Quote No: 16105
Address: 60 Port Blvd Ste. 201	Telephone No. / Fax No. / Email: 406-293-8595 x35 Dodgeta@CDMSmith.com	Waybill No.: 7974 4303 1005 / 7974 4307 8985 ; 7974 4305 6961 / 7974 4309 3780	Page: 1 of 1
City: Libby	State: MT	Zip Code: 59923	
Project Name: Libby Asbestos Site			
Project Number: 1110-000-006-AL	P.O. Number: Sub contract Tracking 14820		

Preservative: 1. Ungres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCl 6. Na Thio. 7. NaOH

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: FF Diss Metals Diss Mercury	VOC	Cl+SO4 NO2 NO3	COD+	EPH	VPH	CN	Number of Containers	Bottle (See instructions on back)	Preservative	Lot No.	Remarks / Cooler ID
									13	A	1	1	2	2	1				6L19041	
									D	5	D	O	I	A	D					
									4		1	3	5	5	7					
IR-45185	12/17/13	11:25	G	X					1	3	1	1	2	2	1					
IR-45186	12/17/13	11:35	G	X					1	3	1	1	2	2	1					
IR-45187	12/18/13	09:15	G	X					1	3	1	1	2	2	1					
IR-45188	12/18/13	09:55	G	X					3	9	3	3	6	6	3					
TB-1	12/17/13	NA	NA					X		1										
TB-4	12/18/13	NA	NA					X		1										

Turn Around Time Required (Prior lab approval required for expedited TAT): X Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client X Disposal by Lab

QC Requirements (Specify): MS/MSD 1R-45188

Possible Hazard Identification: X Non Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler: KB	12-18-13	1138	1. Received by: Tracy Dodge CDMSmith Sample Coordinator	12/18/13	1138
2. Relinquished by: Tracy Dodge CDMSmith	12/18/13	1300	2. Received by:	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by: FedEx	Date 12/19/13	Time 1115	4. Laboratory Received by	Date 12/19/13	Time 1115

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY — Received on Ice (Check) X Yes ☐ No Ice Pack — Receipt Temp. -0.9, -0.8, -0.5, 0 °C — Temp. Blank

CMT 12/19/13

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc. 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 13

Replaces Date: 09/24/13
Effective Date: 09/26/13

Sample Receipt Checklist (SRC)

Client: CDM Smith Cooler Inspected by/date: CMT/12/19/13 Lot #: OL19041

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other

Yes ☑	No ☐		1. Were custody seals present on the cooler?
Yes ☑	No ☐		2. If custody seals were present, were they intact and unbroken?

Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt:
1580/-0.7/20.9 °C 569/-0.5/-0.8 °C 1340/-0.2/-0.5 °C 611/0.3/0 °C
Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: _____ IR Gun Correction Factor: _____ °C
Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: _____. (For coolers received via commercial courier, PMs are to be notified immediately.
Yes ☑	No ☐	NA ☐	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☑	NA ☐	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☑	No ☐		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☐	No ☑		15. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☑	No ☐	NA ☐	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☑	No ☐	NA ☐	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☑	No ☐	NA ☐	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4,HNO$_3$,HCl,NaOH) with the SR # (number)

Sample(s) _____ were received with bubbles >6 mm in diameter.

Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: _____ Date: _____

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: _____ Date of response: _____

Comments: _____

Appendix C – Field Logs December 2013 Event

Event ID LCLO20108

Libby Water Sample & Location
Field Sample Data Sheet

FSDS # W - 100314

Address Lincoln County Landfill

Date 12-17-13

Property ID: AD-000196 Logbook # 10130 Pgs 24-25 Sampler(s)** K. Beaudoin, T. Vandenwood

	Data Item	1	2	3
*	**Location ID**	SP-113799 →	→	~~SP-113801~~ KRB 12-17-13 AD-000196
*	**Is this a new Location**	Yes (No) Revised (If No, "Z" through location section)	Yes (No) Revised (If No, "Z" through location section)	Yes (No) Revised (If No, "Z" through location section)
*	**Location Type**			
*	**Location Description**			
	Location Area (ft^2)			
	Location Comment		12-17-13	
	Location Comment 2			
*	**Sample ID**	**1R- 45185**	**1R- 45186**	**1R- 45187**
*	**Sample Time**	1125	1135	
*	**Sample ABS**	(N) Y	(N) Y	(N) Y
*	**Sample Venue**	Indoor (Outdoor) NA	Indoor (Outdoor) NA	Indoor (Outdoor) NA
*	**Sample PrePostClear**	(NA) Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	(NA) Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	(NA) Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th
*	**Sample Type**	(FS) FD FB Other____	FS (FD) FB Other____	(FS) FD FB Other____ 12-17-13
	Sample Parent ID		1R-45185	
*	**Composite**	Y (N)	Y (N)	Y (N)
*	**Sample Aliquots**	(1) Other____	(1) Other____	(1) Other____
	Sample Location Description	CDM-MW-08	Dup-1-CDM-MW-08	Field Blank
	Sample Field Comments			

24701

V 120120

*Required Field

**List company after Sampler(s) if not "CDM Smith"

For Field Team Completion: Completed by: KRB QC by: KM

For Data Entry: Entered by: [illegible] QC by: [illegible]

Event ID LCL020108

Libby Water Sample & Location
Field Sample Data Sheet

FSDS # **W - 100315**

Address Lincoln County Landfill

Date 12-18-13

perty ID: AD-00196 Logbook # 10130 Pgs 24 Sampler(s)** K. Beaulon, T. Vanderweel

	Data Item	1	2	3
*	**Location ID**	SP-113801		
*	**Is this a new Location**	Yes (No) Revised *(If No, "Z" through location section)*	Yes No Revised *(If No, "Z" through location section)*	Yes No Revised *(If No, "Z" through location section)*
*	**Location Type**			
*	**Location Description**			
	Location Area (ft^2)			
	Location Comment	12-17-13		
	Location Comment 2			
*	**Sample ID**	**1R- 45188**		
*	**Sample Time**	0955		
*	**Sample ABS**	(N) Y	N Y	N Y
*	**Sample Venue**	Indoor (Outdoor) NA	Indoor Outdoor NA	Indoor Outdoor NA
*	**Sample PrePostClear**	(NA) Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	NA Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	NA Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th
*	**Sample Type**	(FS) FD FB Other____	FS FD FB Other____	FS FD FB Other____
	Sample Parent ID			12-17-13
*	**Composite**	Y (N)	Y N	Y N
*	**Sample Aliquots**	(0) Other____	0 Other____	0 Other____
	Sample Location Description	CDM-MW-07		
	Sample Field Comments	~~MS/MSD~~ 12-17-13 MS/MSD		

V 120120

*Required Field

**List company after Sampler(s) if not "CDM Smith"

For Field Team Completion: Completed by: KB QC by: KM

For Data Entry: Entered by: EJL QC by: KM

Event ID LCL 020108

Libby Water Sample & Location
Field Sample Data Sheet

FSDS # **W - 100316**

Address Lincoln County Landfill

Date 12-18-13

Property ID: AD-000196 Logbook # 10130 Pgs 26 Sampler(s)** K. Beaudoin, T. Vandervelde

	Data Item	1	2	3
*	**Location ID**	AD-000196		
*	**Is this a new Location**	Yes (No) Revised *(If No, "Z" through location section)*	Yes No Revised *(If No, "Z" through location section)*	Yes No Revised *(If No, "Z" through location section)*
*	**Location Type**			
*	**Location Description**			
	Location Area (ft^2)			
	Location Comment	KB 12-18-13		
	Location Comment 2			
*	**Sample ID**	IR-45187		
*	**Sample Time**	0915		
*	**Sample ABS**	(N) Y	N Y	N Y
*	**Sample Venue**	Indoor (Outdoor) NA	Indoor Outdoor NA	Indoor Outdoor NA
*	**Sample PrePostClear**	(NA) Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	NA Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th	NA Pre Post Clear: 1st 2nd 3rd 4th 5th 6th 7th
*	**Sample Type**	FS FD (FB) Other____	FS FD FB Other____	FS FD FB Other____ 12-18-13
	Sample Parent ID			
*	**Composite**	Y (N)	Y N	Y N
*	**Sample Aliquots**	(0) Other____	0 Other____	0 Other____
	Sample Location Description	Field Blank		
	Sample Field Comments			

V 120120

*Required Field

**List company after Sampler(s) if not "CDM Smith"

For Field Team Completion: Completed by: KRT QC by: KM

For Data Entry: Entered by: pjd QC by: KAM

WATER SAMPLING LOG

Project/No. 6421.003.290.R1044 Page 1 of 2

Site Location Lincoln County Landfill

Site/Well No. CDM-MW-07 Coded/Replicate No. _____ Date 12-18-13

Weather 32°F overcast Time Sampling Began 0955 Time Sampling Completed 1047

EVACUATION DATA

Description of Measuring Point (MP) TOP OF PVC

Height of MP Above/Below Land Surface	15"	MP Elevation	2,422.60
Total Sounded Depth of Well Below MP	271.70'	Water-Level Elevation	2,202.98
Depth to Water Below MP	219.62	Diameter of Casing	4
Water Column in Well	52.08'	Gallons Pumped/Bailed Prior to Sampling	1.75
Gallons per Foot	0.65		
Gallons in Well	33.85	Sampling Pump Intake Setting (feet below land surface)	≈ 241.80

Evacuation Method Low flow via Bladder Pump.

FINAL FIELD PARAMETERS/SAMPLING DATA

Color NONE | Odor NONE | Appearance clear | Temperature 8.19 °F/°C

Other (specific ion; OVA; HNU; etc.) NA

Cond. 0.413 mS/cm | pH 7.51 | D.O. 1.02 mg/L | ORP 96.6 mV | Turb. 0.14 NTU

Sampling Method and Material Bladder Pump Low flow

Constituents Sampled	Container Description From Lab ✓ or CDM	Preservative
see Attached table		

KB 12-15-13

Remarks

Sampling Personnel K. Beaudoin CDMSmith, T. Vanderweel CDM Smith

WELL CASING DIAMETERS AND VOLUMES

1-1/4"	= 0.06	2"	= 0.16	3"	= 0.37	4"	= 0.65
1-1/2"	= 0.09	2-1/2"	= 0.26	3-1/2"	= 0.50	6"	= 1.47

FIELD PARAMETER LOG

Site Location Lincoln County Landfill

Site/Well No. CDM-MW-07

Time	Volume Removed (gal)	Water Level (ft)	Turbity (NTU)	Clarity/ Color	Temp (°C)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Remarks
0920	<0.5	219.67	0.15	clear	8.37	7.34	0.414	1.99	177.9	< 1L/min
0925	0.5	219.65	0.18	clear	8.21	7.32	0.414	1.51	153.3	
0930	0.75	219.65	0.18	clear	8.20	7.36	0.414	1.27	136.7	
0935	1	219.65	0.17	clear	8.20	7.45	0.413	1.11	119.8	
0940	1.25	219.65	0.19	clear	8.18	7.48	0.413	1.07	110.9	
0945	1.5	219.65	0.19	clear	8.20	7.49	0.413	1.03	102.6	
0950	1.75	219.65	0.14	clear	8.19	7.51	0.413	1.02	96.6	
0955	Sampled									

12-18-13

WATER SAMPLING LOG

Project/No. 6421.003.290.R1044 Page 1 of 2

Site Location ~~CDM~~ LRB 12-17-13 Lincoln County Landfill

Site/Well No. CDM-MW-08 Coded/Replicate No. _____ Date 12-17-13

Weather 24°F Overcast Time Sampling Began 1125 Time Sampling Completed LRB 12-17-13 ~~1125~~ 1210

EVACUATION DATA

Description of Measuring Point (MP) TOP OF PVC

Height of MP Above/Below Land Surface	15"	MP Elevation	2,415.18
Total Sounded Depth of Well Below MP	253'	Water-Level Elevation	2188.29
Depth to Water Below MP	226.89'	Diameter of Casing	4
Water Column in Well	26.11	Gallons Pumped/Bailed Prior to Sampling	3.25
Gallons per Foot	0.65		
Gallons in Well	16.97	Sampling Pump Intake Setting (feet below land surface)	~238.5'

Evacuation Method Low flow via Bladder Pump

FINAL FIELD PARAMETERS/SAMPLING DATA

Color NONE | Odor NONE | Appearance Clear | Temperature 7.61 °F/(°C)

Other (specific ion; OVA; HNU; etc.) NA

Cond. 0.507 mS/cm | pH 7.40 | D.O. 4.05 mg/L | ORP 55.7 mV | Turb. 0.40 NTU

Sampling Method and Material Bladder Pump Low flow

Constituents Sampled	Container Description From Lab X or CDM _____	Preservative
SEE ATTACHED TABLE		

12-18-13

Remarks NA

Sampling Personnel K. Beaudoin CDMSmith, T. Vanderweel CDMSmith

WELL CASING DIAMETERS AND VOLUMES

1-1/4"	= 0.06	2"	= 0.16	3"	= 0.37	4"	= 0.65
1-1/2"	= 0.09	2-1/2"	= 0.26	3-1/2"	= 0.50	6"	= 1.47

FIELD PARAMETER LOG

Site Location Lincoln County Landfill

Site/Well No. CDM-MW-08

Time	Volume Removed (gal)	Water Level (ft)	Turbity (NTU)	Clarity/ Color	Temp (°C)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Remarks
1030	<0.5	226.89	1.76	Clear	7.43	7.29	0.506	5.51	32.4	< 1L/MIN
1035	0.75	226.89	1.76	clear	7.52	7.25 ~~7.3~~	0.509	4.09	9.4	
1040	1.0	226.89	1.97	Clear	7.49	7.28	0.509	3.78	8.9	
1045	1.25	226.89	1.43	Clear	7.52	7.31	0.508	3.87	13.0	
1050	1.50	226.89	1.21	Clear	7.55	7.35	0.508	3.87	21.3	
1055	2	226.89	0.72	Clear	7.55	7.36	0.508	3.99	30.2	
1100	2.25	226.89	0.43	Clear	7.55	7.38	0.507	4.04	36.5	
1105	2.5	226.89	0.32	clear	7.55	7.38	0.507	4.04	42.5	
1110	2.75	226.89	0.24	clear	7.57	7.39	0.507	4.06	46.3	
1115	3	226.89	0.27	Clear	7.60	7.40	0.507	3.99	49.9	
1120	3.25	226.89	0.40	clear	7.61	7.40	0.507	4.05	55.7	
1125	Sampled									

12-18-13

2013 December Landfill Ground Water Event

Shortest Lab Extraction Limit is 7 Days (EPH)			1 Field Samp CDM-MW-8	1 Field Dup CDM-MW-8	1 Field Blank (ASTM water)**	1 Field Samp MS/MSD* CDM-MW-7	Spare Bottle Ware	Total
		CDM SAMPLE ID	1R-45185	1R-45186	1R-45187	1R-45188		
		Location ID	SP-113799	SP-113799	AD-000196	SP-113801		
		Date Collected:	12-17-13	12-17-13	12-18-13	12-18-13		
		Time Collected:	1125	1135	0915	0955		
Shealy Lab	**Preservative**	**Containers Types**	**Qnty x 1**	**Qnty x 1**	**Qnty x 1**	**Qnty x 3**	**NA**	
FF-Diss Metals	HNO3	(1) 250ml Poly	1	1	1	3	2	8
Chloride (Cl) & Sulfate (SO4)	None	(1) 250ml Poly	1	1	1	3	1	7
COD & NO2/NO3	H2SO4	(1) 250ml Poly	1	1	1	3	2	8
CN	NaOH	(1) 250ml Poly	1	1	1	3	2	8
Volatile Organic Compounds	HCl	(3) 40ml VOA vials	3	3	3	9	6	24
VPH 04-1.1	HCl	(2) 40ml VOA vials	2	2	2	6	4	16
EPH 04.1	HCl	(2) 1 L Amber Glass	2	2	2	6	1	13
Trip Blank***	Prepared by Lab***	(1) 40ml Glass Vial	1	NA	1	1	1	4
Temp Blanks****			1	1	1	1	1	4
EMSL								
Asbestos (TEM-ISO)	None	(1) Liter Poly	1	1	1	1	1	5

* MS/MSD has same holding times for these analyses as Non-MS/MSD samples according to CompuChem

** Prepare in field

*** Prepared by lab (leave taped to cooler) 1 bottle per day of sampling per cooler containing VOAs (Trip Blank should remain & ship with VOAs)
If 40 ml vials are shipped in separate coolers you must include one Trip Blank per cooler with 40 ml vials in it. (Id # is TB-1, TB-2, TB-3, etc per set)

****1 Temp Blank per cooler

Lincoln County Landfill Log Book 10/3/0
well monitoring event 12-17-13
weather: 26°F overcast. Bi-Annual Groundwater sampling event at Lincoln County Landfill.
All Activities performed IAW Lincoln county class III Asbestos Landfill ops plan. Feb 2008 Rev 2, CDM smith SOP 1-6, 4.5
K. Beaudoin (CDM Smith) / Aguilar
0822 on-site. met with R. Cummings (Arrowhead Engineering) to Gauge wells 2, 3, & 4. Equipment Decon'ed Before & after each test.

Well ID	DTW(ft)
mw-2	165.45
mw-3	203.02
mw-4	156.46
CDM-mw-07	219.62
CDM-MW-08	226.89

0853 T. Vanderweel & T. Dodge CDM smith on-site to open wells 7 & 8 prior to gauging & sampling.
0935 set up on CDM-MW-08.
1020 started Bladder Pump system. system set @ 140 psi Drive 28s vent 18 sec. Less than 1L/min of flow. Reference FSDS # WR-100314 & Field Parameter Log for details.

1/2

Lincoln County Landfill Log book 10/3/0
well monitoring event 12-17-13. Bi-annual Groundwater sampling event at Lincoln county Landfill. All Activities performed IAW Lincoln county class III Asbestos Landfill ops plan Feb 2008 Rev 2. CDM smith SOP 1-6, 4.5.
1210 samples collected. 1216 off-site.
1330 Picked up size 'S' tank of N_2 from Norco. 1354 on-site & set up on CDM-MW-07 New N_2 tank started @ 1900 psi. 1404 started bladder pump system. 1409 Flow through cell is Receiving excessive air & no water. Stopped system & adjusted Drive & vent system. Bubbles continue. Removed pump from the well. Checked connections at pump & Re-strung cables. Decon'ed pump. 1452 started pump. Bubbles continue. 1523 Removed pump from well. Decon'ed 5gal Buckets then filled with DI water Placed lines into buckets to check for leaks in the lines. No leakes observed when pressurized. 1610 Removed the pump from CDM-MW-08. Cleaned up the site 1635 off-site. samples were Relinquished to CDM sample coordinator @ 1230 for analysis.

12-17-13

2/2

1/1

Lincoln County Landfill Log Book 10/3/10
Well Monitoring Event 12-18-13. Weather 32°f overcast. Bi-annual Groundwater sampling event @ Lincoln county Landfill. All Activities performed IAW Lincoln County class III asbestos Landfill ops plan Feb 2005 Rev 2, CDM smith sec 1-6, 4.5.
0845 on-site with T. Vanderweel (CDM smith). K. Beaudom CDM smith (author) set up on CDM-MW-07. K. Beaudom Disassembled & troubleshot the Bladder Pump. The Bladder was Not sealed on the O-Rings. Pump from MW-8 used in MW-7. Deconned pump & connected it to the cables & lowered pump into well, CDM-MW-07 DTW 219.61' BGS. N2 'S' tank started @ 1600 PSI, 28sec Drive & 18sec vent. 0903 started system. 0905 water at surface. 0915 Field Blank collected Reference FSDS# WI-000316 for Details. 0955 collected samples Reference FSDS # WI-000315 & the Field Parameter log for Details. 1047 samples collected. site cleaned up & equipment Decon'ed. 1058 off-site 1120 Relinquished samples to CDM smith Sample coordinator for analysis. 1430 on-site to install the trouble shot Pump into CDM-MW-08. Decon'ed pump & Lowered into the well. tested pump. Pump is operational. N2 'S' Tank has 750 psi Remaining. 1516 off site Returned N2 tank to NORCO. Tank 'K' should be ordered next event.

CDM Smith

cdmsmith.com